CONSTRUCTION AND STANDARDIZATION OF LIFE SKILLS INVENTORY AND RELATIONSHIP BETWEEN LIFE SKILLS AND COGNITIVE ABILITIES OF COLLEGE STUDENTS IN MIZORAM

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Construction and Standardization of Life Skills Inventory and Relationship between Life Skills and Cognitive Abilities of College Students in Mizoram

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CERTIFICATE

This is to certify that the thesis entitled ***"Construction and Standardization of Life Skills Inventory and Relationship between Life Skills and Cognitive Abilities of College Students in Mizoram"*** submitted by Estherine Lalrinmawii, Regn. No. MZU/Ph.D./1361 of 31.07.2019 for the Degree of Doctor of Philosophy in Education of the Mizoram University, Aizawl, India embodies the record of original investigation carried out by her under my supervision. She has been duly registered and the thesis presented is worthy of being considered for the award of Ph.D. degree. This research work has not been submitted for any degree of any other university.

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DECLARATION

I Estherine Lalrinmawii, hereby declare that the subject matter of this thesis is the record of work done by me, that the contents of this thesis did not form basis of the award of any previous degree to me or to do the best of my knowledge to anybody else, and that the thesis has not been submitted by me for any research degree in any other University/Institute.

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CHAPTER I

CONCEPTUAL FRAMEWORK

A skill represents a mastered capability to perform certain tasks effectively or accomplish specific objectives. These abilities are acquired and honed through a series of progressive stages, aligning with an individual's developmental age and maturity. While skills embody the proficiency in conducting certain activities, their development is not solely reliant on formal learning or training programs. Instead, they often emerge naturally and spontaneously as part of the typical growth process, influenced by one's interests, natural inclinations, and aptitudes (Amandeep, 2016).

According to Flanagan (1954) skills can be defined as "learned behaviours and acquired abilities that enable individuals to perform specific tasks or functions efficiently and effectively."

Ericsson (2006), in his research on expertise and deliberate practice, describes skills as the outcome of consistent, intentional practice and learning, where individuals improve their abilities through repeated performance and feedback.

There are different types of skills that individuals can possess, including technical skills, soft skills, and transferable skills.

- *Technical skills* are specific, job-related abilities that are often quantifiable and teachable. They encompass expertise in tools, software, machinery, or processes. For example, programming, data analysis, and mechanical engineering are technical skills. These skills are crucial in professions that require specialized knowledge and proficiency. Technical skills are typically acquired through education, training, and hands-on experience and are essential for performing tasks efficiently within a particular field or industry (Katz, 1955).
- *Soft skills*, also known as interpersonal or people skills, are non-technical attributes that enable effective communication, collaboration, and interaction with others. They include skills like communication, teamwork, problem-solving, and adaptability. Soft skills are vital in almost every profession as they enhance relationships, leadership, and workplace harmony. Unlike technical skills, soft skills are less tangible and often come naturally to individuals, but they can also be developed and improved through practice and self-awareness (Schulz, 2008).

- *Transferable skills* are adaptable competencies beneficial in a wide range of jobs and sectors. They encompass abilities like analytical reasoning, efficient time management, and effective leadership. These skills are valuable because they enable individuals to adapt to different work environments and roles, making them highly sought after by employers. Transferable skills are often developed through a combination of education, work experience, and personal growth. They allow individuals to excel in diverse careers and are particularly beneficial when transitioning between different professions or advancing within one's career (Kemp & Seagraves, 1995).

Skills are essential for an individual's success in various domains of life, including education, employment, and personal relationships. Skills are essential because they enable individuals to perform tasks effectively and contribute to personal and professional success. Possessing the right skills, whether technical, soft, or transferable, is crucial for matching job requirements and ensuring job suitability. Therefore, the acquisition and enhancement of skills are vital components of the college experience, equipping students with the tools they need to thrive in their future careers (Gallagher et al., 1992).

1.1.0 Concept of life skills

Life skills are defined as “the abilities for adaptive and positive behaviour that enable individuals to deal effectively with the demands and challenges of everyday life” (WHO, 1997). Adaptive means an individual possesses flexibility in their approach and can readily adapt to varying situations. Positive behaviour suggests that even when faced with challenging circumstances, a person maintains a forward-looking perspective, identifying opportunities and solutions amidst adversity.

Winston (1990) defines life skills as “an interrelated set of behaviours and attitudes which the culture specifies should be exhibited at approximately the same time by a given age cohort in a designed context”.

UNICEF (2010) describes life skills as a change in behaviour or development of behaviour method that focuses on addressing a combination of three key elements: knowledge, attitude, and skills.

Powell (1985) characterizes life skills as coping abilities aligned with the developmental stages. These are the competencies required to carry out tasks suitable for a specific age and gender across various dimensions of human growth, encompassing psychological, physical, sexual, vocational, cognitive, moral, ego, and emotional domains.

Hopson and Scally (1984) classify life skills into four distinct categories: (1) Learning/Academic skills, (2) Interpersonal skills such as communication and assertiveness, (3) Practical skills related to work and leisure, including time management, and (4) Personal development skills encompassing stress management and decision-making, among others.

1.1.1 Principal components of life skills

The principal components of life skills can be broadly categorized into three groups: thinking skills, social skills, and emotional skills. These three components work together to help individuals navigate various situations and challenges in their personal and professional lives.

1. **Thinking skills:** According to Alvino (1990), thinking skills refers to a comprehensive collection of both fundamental and advanced abilities and sub-skills that oversee an individual's cognitive processes. These encompass knowledge, personal predispositions, and various cognitive and metacognitive functions, collectively shaping a person's mental functioning. According to Beyer (1991), thinking skills are the specific, clearly defined mental processes employed in varying combinations during our thought processes.

The World Health Organization (WHO, 1997) defines thinking skills as "the cognitive abilities needed to analyse, evaluate, and use information to solve problems, make decisions, and learn new things". These skills include critical thinking, problem-solving, decision-making, and creativity.

A thinking skill refers to the decomposition of cognitive processes into a defined sequence of explicit actions, systematically employed to direct and enhance the process of thinking (Johnson, 2000).

In Kagan's classification from 2003, thinking skills are categorized into three distinct types: comprehension of information, manipulation of information, and

generation of information. Within each of these categories, there exist specific skills. For instance, the skill of "summarizing" pertains to comprehending information, "problem solving" is associated with manipulating information, and "questioning" corresponds to generating information.

Thinking skills encompass mental processes utilized for problem-solving, decision-making, organizing inquiries, formulating strategies, idea refinement, information retrieval, and creative production. These cognitive abilities enhance learning from experiences, bolster intelligence utilization, and prepare individuals for life, fostering self-awareness and contributing positively to the community (Santrock, 2011).

2. Social skills: According to the World Health Organization (WHO), Social skills encompass an individual's capacity for effective interaction and communication with others in diverse social contexts, utilizing both spoken language and non-verbal cues. These skills are essential for building and maintaining relationships, collaborating with others, and navigating social and cultural contexts (WHO, 1997).

Social skills are fundamental to an individual's achievement, enabling them to engage in conversations, initiate and sustain relationships and friendships. In essence, social skills encompass behaviours that facilitate favourable interactions with others (Lynch & Simpson 2010). Social skills are commonly described as a collection of abilities that encompass problem-solving, communication, decision-making, interactions with peers and groups, as well as assertiveness and self-management (Kolb & Hanley-Maxwell, 2003).

Social skills encompass the abilities that enable individuals to engage in effective communication and interaction with others within the society. These skills involve using appropriate language, maintaining eye contact, and asking relevant questions. They play a vital role in establishing and sustaining positive relationships with others while adhering to social norms and rules. Essentially, social skills are the behavioural elements that assist us in adapting to diverse social environments, facilitating our integration into society (Kabasakal & Çelik, 2010).

According to Walker (1983), social skills encompass a range of abilities that enable us to initiate and sustain positive social connections, foster peer acceptance, achieve a successful school transition, and effectively navigate our social

surroundings. Possessing strong social skills is of paramount importance for overall life functionality. These aptitudes empower us to make sound life decisions, effectively communicate with others, seek assistance when needed, and cultivate healthy relationships within society.

Social skills are vital for children, enabling them to effectively integrate into peer groups and maintain positive relationships with teachers and other adults in society. Moreover, social skills continue to be of great significance during adolescence, a phase marked by the transition from childhood to adulthood. Adolescents undergo rapid physiological and psychological changes, leading them to mature and expand their social connections beyond the family circle. This period often presents identity crises, compelling adolescents to establish their unique identities. Improved social skills are crucial in fostering healthy relationships and facilitating identity development. In fact, social skills serve as a cornerstone for success in personal, academic, social, and future professional endeavours (Elias et al., 1997).

Social skills have the potential to enrich personal growth, foster improved comprehension, enhance productivity, boost employability, and contribute to career accomplishments. The desire for strong, meaningful, and close relationships is universal, as they significantly enhance one's quality of life. Social skills serve as the fundamental cornerstone for building positive relationships and fostering better understanding between individuals. This, in turn, has a positive impact on both their mental and physical well-being. Individuals' adept at cultivating and sustaining healthy and constructive relationships often experience a reduced risk of psychological issues such as depression, anxiety, loneliness, and frustration. Furthermore, they witness an increase in self-identity, self-esteem, and autonomy (Johnsons & Johansons, 1987).

3. Emotional skills: The World Health Organization (WHO) characterizes emotional skills as the capacity to identify and comprehend emotions in oneself and others, the skill to control and oversee these emotions, and the aptitude to use emotions to direct thoughts and actions (WHO, 1997). These competencies are of paramount importance for an individual's holistic state of well-being and are crucial for fostering constructive social interactions, proficient communication, and nurturing wholesome relationships.

Salovey and Mayer (1990) introduced the idea of emotional intelligence, which can be described as the capacity to observe and understand both one's own and others' emotions, differentiate between these emotions, and utilize this awareness to influence one's thoughts and behaviour. They outlined a model of emotional intelligence consisting of four key components. These include emotional perception, emotional facilitation, emotional understanding, and emotional management.

(i) Emotional perception: The initial step in understanding emotions involves identifying and interpreting them, which may encompass the interpretation of non-verbal cues like body language and facial expressions.

(ii) Emotional facilitation: The subsequent stage entails using emotions to enhance cognitive processes. Emotions influence our focus and response, guiding our attention toward emotionally relevant stimuli.

(iii) Emotional understanding: Emotions are multifaceted and subject to various interpretations. For instance, if someone displays signs of anger, a listener might seek to understand the underlying causes and implications of that anger.

(iv) Emotional management: Effectively controlling emotions is a crucial aspect of advanced emotional maturity. This includes regulating one's own emotions and appropriately responding to the emotions of others, contributing to emotional regulation.

The concept of Emotional Intelligence (EQ) gained widespread recognition in the mid-90s, largely thanks to the work of Daniel Goleman. Goleman (1998) describes EQ as the ability to not only understand and manage our own emotions but also to recognize the emotions of others. Furthermore, EQ involves the capacity to self-motivate and effectively handle emotions within ourselves and in our interactions with others.

According to Bar-On (2010), emotional intelligence represents an individual's capacity to effectively navigate the challenges they encounter in their daily surroundings. Furthermore, it plays a pivotal role in forecasting an individual's achievements in various aspects of life, encompassing both their professional and personal endeavours.

Emotional skills encompass the capacity to identify, express, and regulate one's emotions. They serve as the cornerstone of self-awareness and contribute significantly

to maintaining positive mental health. The ability to recognize and comprehend one's emotions also extends to perceiving and understanding the emotions of others, a pivotal aspect of interpersonal interactions. These emotional skills hold immense importance for several compelling reasons. They enable individuals to effectively articulate and manage their emotions, exercise self-control when circumstances demand it, acknowledge their personal needs, assertively establish boundaries, cultivate fulfilling relationships, prioritize their overall well-being, and ultimately lead a satisfying life. Lacking proficient emotional skills can lead to a scenario where individuals become captives of their own emotions. They might observe that their emotions exert undue influence over their lives, often without conscious decision-making. Proficiency in emotional skills empowers individuals to step back from their emotional responses, allowing them to discern situations in which aligning their actions with their emotions is conducive to their desired objectives and those in which it is not (FSHS).

1.1.2 Ten core skills

WHO (1997) has identified a set of ten core life skills that are considered essential for individuals to lead a healthy and productive life. These skills include:

Thinking skills:

1. **Self-awareness:** Self-awareness, within the context of thinking skills, refers to the ability to consciously recognize and understand one's thoughts, beliefs, biases, and cognitive processes. It involves being aware of one's own thinking patterns, strengths, weaknesses, and the impact of these factors on decision-making and problem-solving. Self-awareness as a thinking skill allows individuals to reflect on their thoughts, emotions, and motivations, and to critically evaluate their cognitive processes. It involves observing and monitoring one's own thinking, identifying biases or cognitive distortions, and recognizing how personal experiences, beliefs, and values influence one's reasoning (WHO, 1997).

Self-awareness is the ability to impartially observe and understand one's own thoughts, feelings, and actions, along with their impact on oneself and those around them. It encompasses the identification of strengths, weaknesses, values, beliefs, and

motivations. Self-awareness is a crucial competence that aids individuals in attaining a deeper insight into themselves, improving their interpersonal relationships, and making more informed choices. It empowers individuals to identify recurring patterns in their behaviour and thinking, facilitating positive adjustments and the accomplishment of goals. Developing this skill can lead to increased self-confidence, empathy, and effectiveness, benefiting both personal and professional aspects of life (Mann et al., 2004; Morin, 2011; Rezai-Niaraki & Rahimi, 2013).

By being mindful of our own existence, actions, and thoughts, and by comprehending how we connect with others as unique individuals, we gain the ability to adapt our behaviour in a manner that fosters positive interactions and relationships with them. This heightened self-awareness empowers us to make conscious adjustments, enabling more constructive and harmonious engagements with those around us. In essence, self-awareness serves as a foundation for enhancing our social interactions and contributing positively to our interactions with others (Amirazodi & Amirazodi, 2011; Amirian, 2012; Adak & Panda, 2020). Understanding the root causes of one's unhappiness enables the cultivation of enhanced self-regulation, while acknowledging vulnerabilities serves as a pathway to effective management and the attainment of desired goals. Fostering self-awareness proves vital not only for improving professional relationships but also for nurturing a more satisfying personal life (Chen et al., 1998; Henriksen et al., 2017; Jamali et al., 2016).

Self-awareness is the capacity to clearly perceive one's own personality traits, including strengths, weaknesses, thoughts, beliefs, motivations, and emotions. This heightened awareness extends to understanding how others perceive one's current demeanour and reactions. Self-aware individuals can discern the direction of their thoughts and emotions. As self-awareness matures, individuals gain the ability to modify their thought processes and interpretations, consequently influencing their emotional responses. This self-awareness is instrumental in recognizing moments of stress or pressure in one's life (Lahav et al., 2014; Li & Choi, 2014).

2. Critical thinking: Critical thinking involves the impartial analysis, assessment, and interpretation of information and arguments, leading to the formulation of logical and well-founded conclusions. It involves actively questioning and examining assumptions, biases, and evidence to arrive at informed judgments and

decisions. Critical thinking is an essential cognitive skill that supports effective problem-solving, decision-making, and learning across various disciplines and contexts. It encourages individuals to go beyond surface-level understanding and engage in deep analysis and evaluation of information (WHO, 1997).

Fisher (1997) defines critical thinking as "Skilled, active, interpretation and evaluation of observations, communications, information, and argumentation."

According to Ennis (1985), critical thinking encompasses a set of skills and dispositions that enable individuals to engage in purposeful, reflective, and systematic thinking. It involves being open-minded and intellectually curious, seeking clarity and accuracy, considering alternative viewpoints, and recognizing the limits of one's own knowledge. Critical thinking also involves applying logical reasoning, weighing evidence, and recognizing and avoiding fallacies in arguments.

Critical thinking skills are universally recognized as a primary goal of education worldwide. These skills hold immense significance in both the personal and professional realms, fostering independent thought and problem-solving abilities in individuals. They are a fundamental outcome of global education, contributing substantially to personal and career development by nurturing independent thinking and the capacity to address complex challenges effectively. This skillset empowers individuals to approach life's complexities with a well-structured and analytical mindset, enhancing their decision-making prowess and adaptability in various situations (Bellaera et al., 2016).

Critical thinking encompasses various component skills such as analysing arguments, drawing inferences through both inductive and deductive reasoning, the assessment or evaluation of information, and the capacity to reach decisions or solve complex problems (Lai, 2011). It involves acquiring the mental acumen required for rigorous analysis and evaluation of information (Cottrell, 2017). Research by Facione (2011) highlights the importance of critical thinking in educational settings. It suggests that students who develop strong critical thinking skills are better equipped to tackle complex academic tasks, evaluate sources of information, and think independently.

3. **Creative thinking:** Creative thinking refers to the ability to generate novel and original ideas, think outside the box, and approach problems or situations with a fresh

perspective. It involves breaking away from conventional patterns of thinking and embracing innovative and imaginative solutions (WHO, 1997).

According to Guilford (1950, 1956), creative thinking is characterized by divergent thinking, which involves generating multiple ideas and exploring different possibilities. Guilford (1950, 1956) theorized that creativity consists of various cognitive elements, with a primary focus on fluency, flexibility, and originality, which collectively contribute to an individual's capacity for productive thinking. He distinguished between convergent thinking, which leads to straightforward and accurate solutions, and divergent thinking, which generates numerous potential ideas. Guilford believed that these two forms of thinking shared common traits and integrated them into his Structure of Intelligence model as components of cognitive abilities.

Van Hook (2002) describes creative thinking as a process that occurs within individuals and between individuals, leading to the creation of unique, valuable, and truly meaningful outcomes. Edwards (2001) added that creative thinking encompasses being receptive to new ideas and fostering the exploration of the unfamiliar, even when it presents challenges.

Research by Runco (2008) suggests that creative thinking involves cognitive processes such as associative thinking, connecting seemingly unrelated ideas, and engaging in analogical reasoning. It often requires the ability to tolerate ambiguity, take risks, and overcome mental blocks or fixed ways of thinking.

Creative thinking is not limited to artistic or creative domains but is essential in various disciplines and industries. For instance, in a study by Amabile (1988), creative thinking was found to be crucial for problem-solving and innovation in the workplace. Organizations that fostered a supportive and open environment for creative thinking were more likely to generate novel solutions and drive innovation.

4. Decision-making: Decision-making refers to the ability to gather and assess information, weigh alternatives, and make choices or judgments that are informed and aligned with one's goals and values. Effective decision-making involves a systematic and rational approach to evaluating options and considering the potential outcomes (WHO, 1997).

Decision making entails the capacity to select the most favourable option from a range of choices in various life circumstances. It involves the ability to assess and

evaluate the advantages and disadvantages of alternatives and to confidently accept responsibility for the outcomes of the decision (Daisy, 2018).

The process of decision-making involves the act of selecting from a set of options, typically consisting of at least two alternatives. Additionally, it underscores the importance of the decision-maker being fully cognizant of the potential consequences stemming from their choices and actions (Prasad, 2018).

Traditional theories of decision-making were predominantly intellectual in nature, positing that decision-makers engage in a rational evaluation of various courses of action, ultimately selecting the one expected to yield the most favourable outcomes (Loewenstein & Lerner, 2003). However, consciousness plays a significant role in influencing an individual's decision-making process. It can impact the content of information processed within the brain during the decision-making process (Erber, 1991; LeDoux, 1993; Mayer et al., 1990). Furthermore, anxiety can inhibit information processing and retrieval while potentially fostering aggressive tendencies, exerting effects on perceptions, ideation, reasoning, and, ultimately, the decision-making process (Lerner et al., 2003).

Decision-making skills involve critical thinking, analysing risks and benefits, considering different perspectives, and utilizing problem-solving techniques. Hammond et al. (1998) emphasized the significance of decision analysis in systematically evaluating options and their potential outcomes.

5. Problem-solving: Problem-solving refers to the ability to identify, analyse, and resolve problems or challenges in a systematic and effective manner. It involves a cognitive process of understanding the problem, generating potential solutions, evaluating alternatives, and implementing the most appropriate course of action (WHO, 1997).

Problem-solving is a valuable cognitive-behavioural process that empowers individuals, couples, or groups to proactively address challenges in their daily lives. When substantial issues are left unresolved, they can lead to mental stress, which in turn may manifest as physical strain. This process involves the self-directed effort to identify and implement effective solutions for specific problems encountered in everyday living (D'ZurUla & Goldfried, 1971).

OECD (2014) explained the meaning of problem-solving competence as an individual's ability to actively participate in cognitive processes aimed at comprehending and resolving problem situations in which a clear solution method is not readily apparent. This also entails a readiness to tackle such situations with the aim of realizing one's potential as a constructive and thoughtful member of society.

According to Mayer (1992), problem-solving is a cognitive process that aims to achieve an objective when individuals do not initially possess a solution technique. This concept is characterized by several key features:

a) **Cognitive:** Problem-solving takes place within an individual's cognitive system. It can be inferred from their behaviour, perspective, and various cognitive activities. This includes changes in the individual's thought processes, self-analysis, and actions during the problem-solving process.

b) **Process:** Problem-solving involves intellectual calculations and actions. It requires applying cognitive processes to manipulate information and create new intellectual representations or solutions.

c) **Directed:** Problem-solving is purposeful and goal-oriented. It is focused on achieving a specific objective or finding a solution to a particular challenge.

d) **Personal:** Problem-solving is influenced by an individual's prior knowledge and experiences. What may be a problem for one person might not pose a challenge for another who already possesses the necessary knowledge and skills to solve it.

In summary, problem-solving is a cognitive endeavour that involves individuals actively working towards a goal, using their cognitive abilities to analyse, manipulate information, and find solutions, which can vary based on their prior knowledge and experiences.

Social skills:

6. Empathy: Empathy is the capacity to comprehend and empathize with the feelings, viewpoints, and life experiences of others. This involves mentally placing oneself in another person's shoe, leading to a deeper sense of connection and comprehension. Empathy plays a crucial role in building and maintaining positive relationships, fostering compassion, and promoting social cohesion (WHO, 1997).

According to Davis (1983), empathy is a complex concept that encompasses two distinct dimensions: affective empathy and cognitive empathy. Affective empathy entails the capacity to empathize by sharing in the emotional states of others, experiencing their emotions, and responding with appropriate emotional reactions. Conversely, cognitive empathy involves the ability to comprehend and adopt the viewpoint of others, even if one does not necessarily share their emotional experiences. Therefore, empathy includes both the emotional connection through affective empathy and the cognitive understanding through cognitive empathy.

Empathy is the capacity to comprehend and embrace one's own challenges and hardships. It is the mental aptitude to embrace others without preconceptions or prejudices. This ability allows an individual to grasp the emotions of individuals in distress and offer them emotional assistance. Empathy fosters a caring attitude towards those who require care and aid. It also facilitates a student's understanding and acceptance of individuals from various cultural backgrounds and origins (Daisy, 2018)

Batson et al. (1991) highlights the significance of empathy in fostering prosocial behaviour and altruism. Empathy enables individuals to experience genuine concern and compassion for others, which in turn serves as a motivating force for them to provide assistance and aid to those who require it.

Furthermore, empathy has been found to be associated with various positive outcomes in interpersonal relationships and beyond. A study by Jolliffe and Farrington (2006) demonstrated that individuals with higher levels of empathy are more likely to engage in prosocial behaviour, display moral reasoning, and have better interpersonal skills.

Empathy can be cultivated and developed through various practices and interventions. Research by Riess (2017) explores the effectiveness of empathy training programs, such as communication skills training, perspective-taking exercises, and mindfulness practices, in enhancing empathy and improving patient care in healthcare settings.

7. Effective communication: Effective communication involves the clear and precise transmission of information, ideas, and emotions, coupled with the capability to actively listen and comprehend the perspectives of others. It involves the use of

appropriate verbal and nonverbal cues, clarity of expression, and the ability to adapt communication style to different contexts and audiences (WHO, 1997).

According to Johnson (1972), communication is described as the deliberate act of one person transmitting a message to another individual with the intention of eliciting a reaction. Effective communication occurs when the receiver comprehends the sender's message in the manner the sender intended and responds appropriately, whether through spoken or non-verbal means.

Research by Hargie et al., (2004) highlights the importance of effective communication in various domains, including personal relationships, workplace interactions, and healthcare settings. Effective communication fosters understanding, promotes positive relationships, and facilitates successful outcomes.

Moreover, effective communication encompasses both verbal and nonverbal elements. According to Mehrabian (1971), communication consists of three components: words (verbal communication), tone of voice (vocal communication), and body language (nonverbal communication). Nonverbal cues such as facial expressions, gestures, and posture can significantly impact the meaning and interpretation of a message.

According to an anthropological study, it was discovered that verbal communication accounted for only 7% of the total communication, while gesturing constituted 58%, and accent or tone made up the remaining 35% (Nelson, 1990).

Active listening is a vital component of effective communication; encompassing complete focus on and comprehension of the communicated message, exhibiting engagement through both spoken and non-spoken signals, and responding suitably. Kim and Gudykunst (2005) emphasizes the importance of active listening in cross-cultural communication, as it helps to bridge communication gaps and promote mutual understanding.

Furthermore, effective communication involves clarity and conciseness in expressing ideas. Research by Gass and Seiter (2019) explores the principles of effective communication, including being clear, concise, and organized in delivering messages. It also highlights the importance of considering the audience and adapting communication style to their needs and preferences.

8. Interpersonal relationships: Interpersonal relationships refer to the connections, interactions, and associations between individuals. They involve the ways in which people communicate, collaborate, and relate to one another. Interpersonal relationships can exist in various contexts, including personal, professional, and social settings (WHO, 1997).

Interpersonal skills are valuable for initiating and sustaining positive relationships while minimizing disruptions. Building connections with others is a vital life skill often referred to as people skills. These skills encompass providing warmth, care, support, and cooperation, which add vibrancy and the potential for happiness and personal satisfaction to life. Learning about interpersonal relationships helps students create favourable connections with individuals and also equips them with the ability to conclude relationships in a constructive manner (Daisy, 2018).

According to Reis et al. (2000), interpersonal relationships are characterized by mutual influence, interdependence, and emotional connection. They involve the exchange of emotions, thoughts, and behaviours between individuals, leading to the development of shared understandings, trust, and social support.

Knapp et al. (2014) highlights the importance of communication in interpersonal relationships. Effective communication involves both verbal and nonverbal elements, such as listening, expressing oneself clearly, and understanding others' perspectives. It plays a central role in establishing and maintaining healthy and satisfying relationships.

Furthermore, interpersonal relationships can be categorized into different types, such as friendships, romantic partnerships, and professional relationships. Each type of relationship has unique dynamics and expectations, and research by Fehr et al. (1999) explores the characteristics and processes that define different types of interpersonal relationships.

Interpersonal relationships are also influenced by factors such as trust, empathy, and conflict resolution. Research by Rempel et al. (1985) emphasizes the role of trust in building and maintaining strong relationships. Trust involves a belief in the reliability, integrity, and benevolence of the other person.

Emotional skills:

9. Coping with stress: Coping with stress is a skill that individuals can develop to effectively manage and adapt to the challenges and demands of stressful situations. It involves the ability to recognize and respond to stress in a healthy and constructive manner. Coping skills encompass a range of strategies and techniques that help individuals reduce stress, enhance resilience, and promote well-being (WHO, 1997).

Research by Lazarus and Folkman (1984) emphasizes the importance of coping as a transactional process involving the cognitive appraisal of stressors and the selection of coping strategies. The appraisal process involves evaluating the significance of the stressor and one's available resources, while coping strategies are the efforts employed to manage and reduce the impact of stress.

According to Prasad (2018), stress management involves recognizing the sources of stress in everyday life, understanding how it affects individuals, and taking actions to control stress levels. This can involve addressing the root causes of stress, such as making improvements to one's physical environment or lifestyle. Alternatively, it may involve learning relaxation techniques to cope with the pressures resulting from inevitable stress, which can lead to health issues.

Furthermore, studies have identified various coping strategies that individuals can utilize. Problem-focused coping involves taking direct action to address the underlying causes of stress. This can include problem-solving, seeking information or assistance, or making changes in the environment or behaviour (Folkman & Moskowitz, 2004). Additionally, research has highlighted the effectiveness of coping skills such as social support seeking, positive reframing, acceptance, and self-care practices (Folkman & Moskowitz, 2004). These strategies help individuals manage stress, regulate emotions, and maintain well-being.

It is important to note that coping with stress is a dynamic process, and individuals may employ different coping strategies depending on the nature of the stressor and their personal preferences. Developing adaptive coping skills can enhance resilience, promote psychological well-being, and facilitate better overall functioning in the face of stress (WHO, 1997).

10. Coping with emotions: Coping with emotions refers to the ability to recognize, regulate, and manage one's emotional responses to challenging or stressful

situations. It involves the skilful handling of emotions to promote well-being, resilience, and adaptive functioning (WHO, 1997).

According to Amandeep (2016) coping with emotion skill involves the recognition of emotions in oneself and others, along with an understanding of how emotions influence behaviour. Once emotions are identified, individuals can respond to them appropriately. This ability enables one to effectively manage and control emotions such as anger, stress, anxiety, sadness, and loneliness. It also helps in dealing with these emotions constructively. Without a fundamental understanding of emotions beyond simple labels like happiness or sadness, adolescents may suppress their emotions, potentially leading to negative behaviour. Teaching children to recognize, analyse, and tactfully address their emotions promotes emotional well-being and stability.

Research by Gross (1998) suggests that coping with emotions involves both emotion-focused and problem-focused strategies. Emotion-focused coping focuses on managing and regulating the emotional experience itself, while problem-focused coping aims to address the underlying causes of the emotional distress. Emotion-focused coping methods encompass approaches like articulating feelings, soliciting support from others, participating in calming or mindfulness exercises, and altering or reassessing the circumstances to modify one's emotional viewpoint.

Furthermore, research by Lazarus and Folkman (1984) highlights the importance of cognitive reappraisal as an effective coping strategy for managing emotions. Cognitive reappraisal involves reinterpreting the meaning of a situation, which can help individuals reframe their emotional response and reduce distress.

Studies have also examined the effectiveness of specific coping skills for managing different emotions. For example, a study by Newman and Nezlek (2022) found that cognitive reappraisal was effective in reducing negative emotions such as sadness and anger, while expressive writing was helpful for reducing symptoms of depression.

Moreover, research by Thompson (1994) explores the role of emotion regulation strategies in coping with emotions. Emotion regulation involves the ability to modulate and adjust one's emotional experience, expression, and physiological response. It

includes strategies such as reappraisal, suppression, and distraction, which can influence the intensity and duration of emotional reactions.

1.1.3 Significance of life skills

The significance of life skills cannot be overstated as they play a crucial role in various aspects of an individual's life. Life skills encompass a wide range of abilities and competencies that enable individuals to navigate challenges, achieve personal growth, foster positive relationships, excel academically, thrive in the workplace, and maintain overall well-being. Here are some key points highlighting the importance of life skills (WHO, 1997):

1. **Personal development:** Life skills are the cornerstone of personal growth and self-improvement, offering individuals a path to self-discovery and empowerment. These skills lay the foundation for profound self-awareness, allowing individuals to delve into their inner worlds, uncover their values, and grasp their strengths and weaknesses. Armed with this understanding, individuals can cultivate a positive self-image and set out on a transformative journey. Self-reflection becomes a tool for continuous improvement, self-motivation fuels the drive to achieve goals, and self-confidence becomes the armour against life's challenges. The cumulative effect of these skills extends beyond the individual, enhancing overall well-being and enabling a life filled with purpose and fulfilment.

2. **Academic success:** Life skills play a pivotal role in fostering academic success. They empower students with essential tools like effective study strategies, efficient time management, and goal-setting prowess, all of which are instrumental in excelling in coursework and meeting academic deadlines. These skills not only help students manage their academic workload effectively but also instil a sense of discipline and focus. Furthermore, critical thinking, problem-solving, and information literacy skills act as catalysts for enhanced learning capabilities. They enable students to navigate complex academic challenges, analyse and synthesize information, and make informed decisions, ultimately contributing to better academic performance. In essence, life skills serve as a strong support system for students on their educational journey, equipping them with the capabilities needed to thrive academically.

3. **Career advancement:** Life skills are prized assets in the realm of employment, serving as the cornerstone of career success. In the professional arena, attributes like effective communication, teamwork, leadership, adaptability, and problem-solving are not just desirable but often non-negotiable. These skills enable individuals to thrive in the dynamic and interconnected landscape of the workplace. Effective communication fosters collaboration and the exchange of ideas, while teamwork and leadership skills contribute to cohesive and high-performing teams. Adaptability ensures that employees can navigate changing environments and embrace innovation. Moreover, problem-solving abilities empower individuals to address challenges creatively and proactively. Cultivating these life skills not only enhances one's employability but also opens doors to career advancement and personal growth, offering a path to a fulfilling and prosperous professional journey.

4. **Healthy relationships:** Life skills play a pivotal role in the cultivation and sustenance of healthy and enriching relationships. Among the key pillars of these skills are effective communication, active listening, empathy, and conflict resolution abilities. Effective communication ensures that individuals can articulate their thoughts and feelings clearly while also being receptive to others' perspectives through active listening. Empathy, on the other hand, allows individuals to understand and relate to the emotions of those around them, fostering deep connections and demonstrating genuine care. Inevitably, conflicts may arise, but with adept conflict resolution skills, individuals can navigate these challenges skilfully, finding common ground and preserving the harmony of their relationships. These life skills collectively empower individuals to construct robust support networks, collaborate seamlessly, and triumph over interpersonal hurdles, enriching their lives with fulfilling and enduring connections.

5. **Emotional well-being:** Life skills are the cornerstone of emotional intelligence and resilience. They equip individuals with the tools to not only understand their own emotions but also effectively manage them. Skills like emotional awareness enable individuals to recognize and name their feelings, providing a solid foundation for emotional regulation. Through self-regulation and stress management, individuals can navigate life's challenges with grace, maintaining their emotional equilibrium even in the face of adversity. These skills foster emotional resilience, allowing individuals to

bounce back from setbacks and cope with stress in a healthy manner. In essence, life skills are the building blocks of positive mental health, enabling individuals to cultivate emotional intelligence, handle difficult situations, and nurture their overall well-being with unwavering strength and balance.

6. **Decision-making and problem-solving:** Life skills serve as the catalyst for honing critical thinking, decision-making, and problem-solving abilities. Those equipped with robust life skills possess the capacity to dissect complex situations, carefully weighing multiple viewpoints and assessing various courses of action. Their adept decision-making is rooted in the ability to analyse choices with a discerning eye and an understanding of consequences. Furthermore, life skills empower individuals to navigate challenges with ease. They excel in problem-solving, adeptly identifying roadblocks, brainstorming innovative solutions, and executing strategies that surmount obstacles. In essence, life skills are the bedrock of sound judgment and resourceful thinking, enabling individuals to make informed choices and tackle life's intricacies with confidence and efficacy.

7. **Communication and interpersonal skills:** Life skills encompass a vital facet of effective communication and interpersonal abilities that hold immense value across diverse contexts. Proficiency in communication empowers individuals to articulate their thoughts, ideas, and emotions with precision, facilitating a profound exchange of information and nurturing clarity in relationships. Moreover, interpersonal skills, including empathy, active listening, and conflict resolution, play a pivotal role in forging harmonious connections. They enable individuals to navigate the complex terrain of human interactions, fostering empathy to understand others' perspectives, employing active listening to deepen comprehension, and utilizing conflict resolution to mitigate disputes. These competencies collectively cultivate an environment of collaboration, problem-solving, and cooperation, contributing to the creation of positive and productive relationships in both personal and professional spheres.

8. **Resilience and adaptability:** Life skills serve as a cornerstone for resilience and adaptability when confronted with life's inevitable challenges and uncertainties. The cultivation of these skills, including resilience, flexibility, and the capacity to navigate ambiguity, equips individuals to not only endure but thrive in the face of adversity. Resilience enables individuals to bounce back from setbacks, demonstrating

the ability to learn and grow from experiences that test their limits. Flexibility facilitates the adjustment to changing circumstances and the adoption of new strategies. The capacity to cope with uncertainty provides a stable foundation for personal growth and well-being, enabling individuals to approach life's transitions with confidence and fortitude.

9. Practical life skills: Life skills extend to encompass a range of practical abilities that are indispensable for independent living and daily functioning. These skills, which include financial literacy, time management, organizational proficiency, and fundamental problem-solving, empower individuals to navigate the complexities of everyday life effectively. Financial literacy enables informed financial decisions and responsible money management. Effective time management ensures productivity and balance in daily tasks. Organizational skills foster orderliness and efficiency, while basic problem-solving equips individuals to tackle various challenges with confidence. These practical life skills collectively contribute to personal autonomy and the ability to make informed choices.

10. Lifelong learning and personal fulfilment: Life skills lay the foundation for a lifelong journey of learning and personal fulfilment. By nurturing a curiosity for ongoing learning, honing critical thinking abilities, and embracing a growth mindset, individuals embark on a path of continuous intellectual and personal growth. A commitment to lifelong learning ensures adaptability in the face of evolving information and technologies, enabling individuals to stay relevant and engaged. Critical thinking skills empower individuals to assess information critically and make informed decisions. A growth mindset fosters resilience in the pursuit of personal aspirations, ensuring that individuals find enduring fulfilment in their intellectual endeavours and the pursuit of their passions. This lifelong learning mindset enriches lives with purpose and intellectual enrichment.

In summary, life skills are of utmost significance in various aspects of life. They contribute to personal development, academic success, career advancement, healthy relationships, emotional well-being, effective decision-making, adaptability, and lifelong learning. By acquiring and honing these skills, individuals can navigate challenges, overcome obstacles, achieve their goals, and lead fulfilling lives.

1.1.4 Theories of life skills

There are several theories that inform the development and implementation of life skills programs. Here are some prominent theories related to life skills:

1. Social Learning Theory (Bandura, 1977b)**:**

Social Learning Theory, proposed by Albert Bandura, emphasizes the role of observational learning and social interactions in the acquisition of skills and behaviours. Social Learning Theory posits that learning occurs not merely through personal experiences but also by observing and replicating the behavior of others. It advocates that life skills are developed by watching exemplary figures, getting constructive feedback, and participating in social exchanges that bolster preferred actions.

In the context of life skills, Social Learning Theory highlights the importance of modelling and observational learning. Individuals are more likely to adopt and develop life skills when they see others successfully using those skills. For example, observing effective problem-solving strategies in others can inspire individuals to adopt similar approaches in their own lives. Additionally, receiving feedback and reinforcement from others for using life skills can strengthen their acquisition and application.

2. Child and Adolescent Developmental Theory (Novak, 2004)**:**

Child and Adolescent Developmental Theory originated from the work of several influential psychologists over the years namely Jean-Jacques Rousseau, G. Stanley Hall, Jean Piaget, Erik Erikson, Urie Bronfenbrenner, Lev Vygotsky and more. Child and Adolescent Developmental Theory serves as a foundational framework for life skills education, emphasizing the importance of understanding the cognitive, emotional, social, physical, and behavioural growth of young individuals. This theory recognizes that children and adolescents undergo distinct stages of development, each with unique characteristics and challenges. By integrating this theory into life skills education, educators can tailor programs to align with the developmental milestones of young learners, ensuring that the acquisition of life skills is age-appropriate and attuned to their evolving needs. This approach helps children and adolescents develop essential competencies, such as communication, problem-solving, and emotional regulation, in a manner that fosters their overall well-being and readiness to face the complexities of life. In essence, Child and Adolescent Developmental Theory

underpins effective life skills education by providing a comprehensive understanding of the growth trajectory of young individuals and guiding the design of programs that empower them with the necessary skills to thrive in various aspects of their lives.

3. Self-Efficacy Theory (Bandura, 1977a)**:**

Self-Efficacy Theory, also formulated by Albert Bandura, focuses on an individual's belief in their ability to succeed in specific tasks or situations. Self-efficacy beliefs influence motivation, effort, and persistence in pursuing goals. According to Self-Efficacy Theory, individuals with high self-efficacy in a particular area are more likely to engage in and effectively apply the skills related to that area.

In the context of life skills, Self-Efficacy Theory highlights the importance of individuals' beliefs in their ability to successfully use and apply life skills. Those with higher self-efficacy in areas such as problem-solving, communication, or decision-making are more likely to actively engage in developing and utilizing those skills. Positive experiences and successful outcomes further enhance self-efficacy beliefs, leading to greater motivation and confidence in using life skills.

4. Cognitive problem-solving theory (Simon & Newell, 1971)**:**

The Cognitive Problem-Solving Theory is associated with the field of cognitive psychology and does not have a single specific originator or a well-defined year of origin. Instead, it has evolved over time through the contributions of various psychologists and researchers in the field of cognitive psychology. Cognitive psychology as a whole emerged as a distinct branch of psychology in the 1960s, breaking away from behaviourism.

Cognitive problem-solving theory plays a pivotal role within the framework of life skill theory, underscoring the cultivation of problem-solving abilities as indispensable life competencies. At its essence, cognitive problem-solving theory centres on the cognitive processes and methodologies individuals employ to comprehend and conquer the myriad challenges encountered in life. These problem-solving proficiencies hold paramount importance for manoeuvring through daily existence, surmounting impediments, and attaining both personal and professional objectives. Within the realm of cognitive problem-solving theory, individuals acquire the capacity to grasp the intricacies of problems, evaluate accessible information, and

formulate efficacious resolutions. This aptitude proves invaluable in diverse personal and professional contexts, as it empowers individuals to confront intricate predicaments, render judicious decisions, and adapt to dynamic circumstances. Furthermore, the cultivation of problem-solving skills augments critical thinking and nurtures creativity, nurturing a forward-thinking and adaptable mindset conducive to addressing a spectrum of life scenarios. Notably, cognitive problem-solving skills find utility in addressing personal quandaries, ameliorating stress management, and harmonizing interpersonal relationships. Additionally, in the professional sphere, these proficiencies are indispensable for workplace conundrums, effective project management, and sound decision-making. In the realm of education, cognitive problem-solving theory occupies a pivotal role in endowing learners with the aptitude to scrutinize, amalgamate, and apply knowledge effectively. In summation, cognitive problem-solving theory constitutes a foundational cornerstone of life skill theory, furnishing individuals with the competence and confidence to adeptly navigate life's intricacies.

5. Risk and Resilience Theory (Greene, 2017)**:**

Risk and Resilience Theory originated in the field of psychology. While the concept of resilience has been studied for many years, the formalization of Risk and Resilience Theory is often attributed to developmental psychologist Norman Garmezy. Risk and Resilience Theory, often integrated into life skill development, is a versatile framework that examines how individuals can effectively navigate adversity and challenges. It posits that individuals possess varying degrees of resilience, which enables them to adapt positively in the face of risk and adversity. This theory highlights the idea that it's not merely the nature of adversity that matters but how individuals respond to it. It emphasizes the significance of equipping individuals with essential life skills to cope with life's challenges. These life skills encompass emotional regulation, problem-solving, adaptability, and social support. By instilling these skills, individuals become better prepared to confront and overcome adversities, ultimately contributing to their personal growth and well-being.

Moreover, Risk and Resilience Theory extends beyond individual resilience to recognize the role of societal and environmental factors in shaping an individual's ability to cope with adversity. It emphasizes addressing root causes and strengthening

the capacities and resources of systems to cope with risks and stresses effectively. In the context of life skills, this perspective underscores the importance of not only teaching individuals to mitigate risks but also fostering their ability to demonstrate resilience in the face of difficulties. This approach equips individuals with the tools needed to thrive in a rapidly changing world, where adaptability and problem-solving are essential. In essence, Risk and Resilience Theory, when integrated into life skill development, provides a comprehensive framework for promoting personal development, resilience, and the capacity to confront life's challenges with confidence.

6. Problem Behaviour Theory (Jessor, 2001)**:**

Problem Behaviour Theory (PBT) was developed by Richard Jessor and his colleagues in the 1960s. It is a psychological theory that primarily focuses on understanding and explaining problematic patterns of behaviour, especially in adolescents and young adults. While it is not traditionally considered a "life skill theory," PBT plays a significant role in addressing behaviours that can impact one's overall well-being and life outcomes. PBT posits that various internal and external factors interact to influence problem behaviour within an individual. These factors can include personal characteristics, social environments, peer influences, and more. By identifying and understanding these factors, individuals can develop life skills related to decision-making, impulse control, conflict resolution, and coping strategies, which are essential for navigating challenges and making positive life choices.

Incorporating elements of Problem Behaviour Theory into life skills education can help individuals build resilience and make informed decisions, ultimately contributing to their personal growth and overall well-being. While PBT itself may not be categorized as a traditional life skill theory, its principles and insights can be valuable in the context of life skills development, enabling individuals to better manage and address problematic behaviours and make healthier life choices.

7. Social Influence Theory (Kelman, 1958)**:**

Social Influence Theory was originated by Herbert Kelman in 1958. Social influence theory, though primarily a concept within the realm of social psychology, can be applied to the development of crucial life skills. This theory explores how individuals are influenced by the people and environment around them. Life skills encompass a range of abilities such as effective communication, decision-making,

conflict resolution, and emotional intelligence. Understanding social influence can be instrumental in developing these skills. For instance, learning to navigate peer pressure and making informed decisions in social situations are vital life skills that can benefit from an understanding of how external factors impact choices. Moreover, social influence theory can help individuals become more aware of the power dynamics and social pressures they encounter in various life contexts, equipping them with the skills to resist negative influences and make choices aligned with their values and well-being. In essence, integrating social influence theory into life skills education provides individuals with the tools to navigate complex social environments and make informed decisions that contribute to their personal growth and overall success.

8. The Theory of Multiple intelligences (Gardner, 1983)**:**

The Theory of Multiple Intelligences was originated by Howard Gardner in the year 1983. This theory of multiple intelligences proposes a framework that extends beyond traditional notions of intelligence and can be applied as a life skill theory. Gardner's theory recognizes multiple unique intelligences, such as verbal-linguistic, logical-mathematical, spatial-visual, physical-kinaesthetic, musical-rhythmic, social-interpersonal, self-intrapersonal, and environmental-naturalistic intelligences. This concept highlights the varied manners in which individuals can demonstrate excellence and interact with their surroundings. Incorporating this theory into life skills education allows individuals to recognize and develop their unique strengths, enhancing their self-awareness and self-confidence. For example, understanding one's interpersonal intelligence can lead to improved communication and relationship-building skills, while intrapersonal intelligence fosters self-reflection and emotional intelligence. Moreover, this theory encourages a more holistic approach to education and personal growth, emphasizing that intelligence extends beyond academic achievements. By recognizing and nurturing these varied intelligences, individuals can better navigate life's challenges, make informed decisions, and lead more fulfilling lives.

9. Constructivist Psychology Theory (Fosnot & Perry, 1996)**:**

Constructivist Psychology Theory is often associated with the work of Jean Piaget. Piaget, a Swiss psychologist, is considered one of the foundational figures in the development of constructivist psychology. He began developing his theories in the

early 20th century, and his work on cognitive development, particularly in children, laid the groundwork for constructivist psychology. Constructivist psychology theory, when applied as a life skill theory, emphasizes the active role of individuals in constructing their own understanding of the world and their experiences. This theory posits that people are not passive recipients of knowledge but rather engage in a process of meaning-making and reality construction. In the context of life skills education, constructivism promotes critical thinking, problem-solving, and adaptability. Learners are encouraged to actively engage with the learning process, reflecting on their experiences and incorporating new knowledge into their existing mental frameworks. This approach fosters the development of essential life skills such as decision-making, effective communication, and the ability to navigate complex and ever-changing situations. Additionally, by recognizing that individuals construct their own realities, constructivism promotes self-awareness and personal growth, helping individuals better understand themselves and their unique perspectives, which are valuable life skills in building fulfilling and meaningful lives.

10. Ecological Systems Theory (Bronfenbrenner, 1979)**:**

Ecological Systems Theory, developed by Urie Bronfenbrenner, emphasizes the influence of environmental factors on an individual's development. This theory acknowledges the interplay between individuals and their various environments. It encompasses the microsystem (direct/immediate environment), mesosystem (relations among microsystems), exosystem (indirect environmental influences), and macrosystem (broader cultural and social contexts).

In the context of life skills, Ecological Systems Theory highlights the importance of considering various environmental factors in promoting the acquisition and application of life skills. For example, the microsystem, which includes family and school, plays a significant role in providing opportunities for individuals to develop and practice life skills. The mesosystem, which involves the interaction between different microsystems, can influence the transfer and reinforcement of skills across contexts. The exosystem and macrosystem also shape individuals' access to resources, societal norms, and cultural expectations related to life skills.

These theories provide valuable insights into the factors that influence the development and effectiveness of life skills programs. By incorporating these theories

into program design and implementation, educators and practitioners can create supportive learning environments that facilitate the acquisition, reinforcement, and application of life skills. These theories provide valuable insights into the factors that influence the development and effectiveness of life skills programs. By incorporating these theories into program design and implementation, educators and practitioners can create supportive learning environments that facilitate the acquisition, reinforcement, and application of life skills.

1.1.5 Measurement of life skills

The measurement of life skills is a multidimensional process that aims to assess individuals' abilities, knowledge, and behaviours in areas essential for managing and succeeding in different aspects of life. Life skills encompass a wide range of abilities, including cognitive, social, emotional, and practical skills. There are various approaches and tools used for measuring life skills, each with its own strengths and limitations. Here are some common methods employed in the measurement of life skills (UNICEF, 2014):

1. **Self-report measures:** Self-report measures involve individuals reflecting on their own skills, attitudes, and behaviours through questionnaires, surveys, or rating scales. These measures rely on individuals' self-perception and self-awareness of their life skills. Participants rate their level of competence, frequency of skill use, or agreement with statements related to specific skills. Self-report measures can provide valuable insights into individuals' perceived competence and self-evaluation of their life skills. However, they may be subject to biases and social desirability effects.
2. **Performance-based assessments:** Performance-based assessments involve individuals demonstrating their life skills through practical tasks or scenarios. These assessments can be conducted through role-plays, simulations, case studies, or real-life situations. Participants are observed or evaluated based on their ability to apply life skills in specific contexts. Assessors or observers use predefined criteria or rating scales to assess individuals' performance. Performance-based assessments provide a more direct measure of individuals' ability to apply life skills in practical situations. They assess real-world application, problem-solving abilities, decision-making,

communication skills, and teamwork. They often require trained assessors or observers to evaluate and rate individuals' performance objectively.

3. **Observational measures:** Observational measures involve trained observers or assessors watching individuals' behaviours in specific situations or contexts. Observers use predefined criteria or rating scales to assess individuals' demonstration of life skills. These measures can be particularly useful in assessing interpersonal skills, communication, problem-solving, conflict resolution, and teamwork. Observational measures provide an objective assessment of individuals' skills in real-time situations. However, there can exist observer biasness in these kinds of measures.

4. **Standardized tests:** Standardized tests are designed to measure specific aspects of life skills using validated instruments. These tests assess individuals' knowledge, understanding, and application of specific life skills. Standardized tests often have established norms and scoring procedures, allowing for comparisons across individuals or groups. They can provide a standardized and quantifiable measure of life skills. However, they may have limitations in capturing the full range of life skills and their application in real-life contexts.

5. **Portfolio assessment:** Portfolio assessment involves individuals compiling a collection of evidence that demonstrates their development and application of life skills over time. Portfolios may include samples of work, reflective journals, project reports, or testimonials from others. Portfolio assessment allows for a more comprehensive and holistic evaluation of individuals' life skills development. It captures their growth, achievements, and personal reflections.

6. **Qualitative interviews and focus groups:** Qualitative methods, such as interviews and focus groups, can provide rich insights into individuals' experiences, perspectives, and behaviours related to life skills. These methods allow for in-depth exploration of how individuals perceive and apply life skills in their lives. Open-ended questions and prompts facilitate a deeper understanding of the context, motivations, and challenges related to life skills.

It is important to note that measuring life skills is not a one-size-fits-all approach. The choice of measurement method depends on the specific skills being assessed, the desired outcomes, and the target population. It is often beneficial to use a combination

of approaches to obtain a comprehensive and well-rounded assessment of individuals' life skills.

Additionally, researchers and practitioners may develop their own measurement tools or adapt existing measures to suit their specific needs and context. Validity, reliability, and cultural appropriateness are important considerations when selecting or developing assessment methods.

1.1.6 Life skills in Mizoram

Life skills are essential abilities that enable individuals to effectively navigate the challenges and complexities of daily life. They empower individuals to make informed decisions, solve problems, communicate effectively, build positive relationships, and adapt to various situations (WHO, 1997). Life skills are universally important, including in the state of Mizoram. Some of the key life skills that are relevant in Mizoram are:

- **Communication skills:** Effective communication is vital in Mizoram, where people from diverse cultural backgrounds and languages coexist (Mizo, Lai, Mara, Hmar, Paite etc). Developing good communication skills helps individuals express their ideas, resolve conflicts, and build strong relationships with others.
- **Problem-solving skills:** Life in Mizoram, like any other place, presents its unique challenges. Problem-solving skills enable individuals to find practical and creative solutions to overcome difficulties and make informed decisions.
- **Decision making:** Sound decision-making skills are crucial for individuals to make choices that align with their values and goals. In Mizoram, where there may be various opportunities and options (especially for future careers), decision-making becomes even more significant.
- **Cultural competence:** Mizoram is a culturally rich state with diverse traditions and customs. Cultural competence helps individuals to respect and appreciate different cultures, promoting harmony and understanding in society.
- **Emotional intelligence:** In the culturally rich fabric of life in Mizoram, understanding and managing emotions hold a pivotal role in shaping both personal growth and societal harmony. Emotional intelligence lays the groundwork for positive

emotional connections within the community. It fosters an environment where emotional expressiveness is encouraged, and emotional differences are understood and respected. Thus, in the unique social and cultural milieu of Mizoram, emotional intelligence contributes significantly to both individual growth and the overall well-being of the community.

- **Financial literacy:** In the distinctive cultural landscape of Mizoram, as in all corners of the globe, financial literacy holds an invaluable position. Equipping oneself with the ability to proficiently manage finances, wisely navigate economic choices, and strategically plan for the future is universally crucial. In Mizoram, steeped as it is in rich tradition and communal life, this is no less important.
- **Time management:** Effective time management is valuable for balancing work, study, family, and personal life. In the intricate social tapestry of Mizoram, where community ties run deep and societal activities abound, time management emerges as a crucial skill. It allows the individuals not just to navigate their personal and professional responsibilities, but also to actively engage in the array of social interactions that are the lifeline of this vibrant society.
- **Critical thinking:** Critical thinking skills are important for analysing information, questioning assumptions, and making informed judgments. They contribute to academic success and effective problem-solving. Therefore, the cultivation of critical thinking skills holds profound implications for the educational landscape and societal growth in Mizoram, enhancing the capacity for informed decision-making and effective problem-solving.
- **Interpersonal skills:** Building and maintaining positive relationships are vital for social harmony and personal growth. Interpersonal skills such as empathy, active listening, and conflict resolution are crucial in Mizoram's social fabric.
- **Resilience:** Life in Mizoram, like any other place, can have its share of challenges. Resilience enables individuals to bounce back from setbacks, adapt to changes, and stay mentally strong.

Promoting and developing these life skills in individuals, especially among students and youth, can lead to a more empowered and capable society in Mizoram.

These skills are not only valuable for personal growth but also contribute to the overall well-being and progress of the state.

1.2.0 Construction and standardization of a scale

The construction and standardization of a scale, such as an educational or psychological scale, is a systematic and iterative process to ensure that the scale accurately and reliably measures the intended construct.

Scale construction: Scale construction is a meticulous and systematic process crucial for developing reliable measurement tools in research. It commences with a precise definition of the construct to be measured, followed by an in-depth literature review to grasp both the theoretical underpinnings and empirical aspects of the construct. This foundational knowledge guides the generation of items, which can be questions or statements, carefully crafted to align with the construct's dimensions. Additionally, the format of the scale is determined, whether it be a Likert scale, multiple-choice items, or another appropriate structure, considering the nature of the construct and research objectives. Subject matter experts play a pivotal role in the content validation phase, where they rigorously review the scale to ensure content validity, ensuring that it comprehensively covers the breadth and depth of the construct. Through iterative revisions driven by expert feedback, the scale is refined to enhance its accuracy and clarity. To assess its initial performance, a pilot test is often conducted with a small sample of participants, allowing for essential feedback and necessary modifications. This iterative process ultimately results in the creation of a reliable and valid measurement instrument, crucial for meaningful research and data collection (DeVellis & Thorpe, 2021).

Scale standardization: After the construction of a scale, a critical step is standardization to ensure that it consistently produces reliable and valid results. Standardization involves a series of rigorous procedures to evaluate the scale's effectiveness. First, the scale is administered to a large and diverse sample of individuals, ideally representative of the population of interest. This step helps ensure that the scale's performance can generalize to a broader context. Subsequently, various statistical analyses are conducted to assess the scale's reliability and validity. Reliability, which measures the consistency of the scale's results, can be evaluated

through test-retest reliability. This involves giving the same scale to the same participants at two distinct times and then comparing their scores. A strong correlation signifies that the scale produces reliable results consistently over time. Moreover, the scale's construct validity is crucial to determine whether it accurately measures the intended construct. This can be assessed through methods such as factor analysis, which examines the underlying structure of the scale, or by correlating the scale's scores with other established measures that theoretically relate to the construct it aims to assess. Additionally, during the standardization process, norms are established. These norms serve as benchmarks for interpreting individual or group scores on the scale. They provide a reference point to understand how a particular score compares to the broader population, aiding in the meaningful interpretation of the scale's results. In summary, standardization is a meticulous process that ensures the reliability, validity, and interpretability of a scale, making it a valuable tool for research and assessment in various fields (Kaur & Singh, 2016; Ansary & Saha, 2023).

This process ensures the scale is reliable and valid, allowing for accurate interpretation and comparison of results. It is crucial that ethical considerations are taken into account throughout the process, in accordance with standards set by professional organizations like the American Psychological Association.

1.2.1 Step for construction and standardization of a scale

Creating a scale, such as a psychological or educational one, is an elaborate process that involves the following steps: (Bai, 2013; Kaur & Singh, 2016; Balamurugan & Govindan, 2019; DeVellis & Thorpe, 2021; Gupta & Verma, 2022; Sarma & Gogoi, 2022; Vishwakarma et al., 2022; Ansary & Saha, 2023)

1. **Conceptualization:** At the outset of scale construction, conceptualization involves defining the construct to be measured. Researchers conduct an extensive literature review to gain insights into the construct's various dimensions and consult with subject matter experts. This process ensures a comprehensive understanding of the construct's facets, setting the foundation for scale development.
2. **Item writing:** Creating a substantial pool of potential items is pivotal. These items, which can be questions or statements, must accurately and precisely reflect the

construct being measured. Clarity, conciseness, and relevance are essential criteria to ensure meaningful and reliable responses from participants.

3. **Expert review:** Following item generation, experts in the field review these items. Expert input is crucial to ensure that the items effectively represent the intended construct, thereby establishing content validity. Additionally, experts may provide valuable insights to enhance item wording or formatting.

4. **Pilot testing:** The initial version of the inventory undergoes pilot testing with a small sample. This phase assesses the comprehensibility of the items, completion time, and identifies any potential issues. It offers an opportunity to fine-tune the instrument for a smoother data collection process.

5. **Item analysis:** Responses to each item are subjected to rigorous analysis to evaluate their performance. Items that perform poorly in terms of discrimination or reliability may be revised or eliminated to enhance the scale's quality and precision.

6. **Finalization of the inventory:** Feedback from the pilot test and item analysis informs the finalization of the scale. Adjustments are made to ensure clarity, relevance, and overall effectiveness.

7. **Administration to a larger sample:** The finalized scale is administered to a larger, representative sample. This step is pivotal for standardization, ensuring that the instrument yields reliable and generalizable results.

8. **Reliability analysis:** To gauge the consistency of responses across scale items, researchers typically employ measures such as Cronbach's alpha or test-retest reliability. This analysis ensures that the scale produces dependable results.

9. **Validity analysis:** Researchers check if the inventory accurately measures the intended construct. This often involves employing methods like factor analysis or correlational analysis with other relevant measures to establish the scale's validity.

10. **Norming:** Norms or standard scores are established based on the responses of the larger sample. These norms serve as benchmarks for interpreting individual or group scores on the scale, facilitating meaningful comparisons and insights into participants' performance.

It is important to adhere to ethical guidelines throughout this process, as per professional standards like those outlined by the American Psychological Association.

1.2.2 Importance of a standardized scale

A standardized scale refers to a measurement instrument that has undergone a rigorous process of standardization to ensure consistent and reliable measurement of a specific construct or variable across different individuals or settings. It plays a crucial role in research, clinical practice, and assessment by providing a standardized and valid means of measuring and comparing variables of interest. The importance of using standardized scales lies in their ability to enhance measurement consistency, reliability, validity, comparability, and generalizability (AERA, APA & NCME, 2014).

- Standardization ensures that the scale is administered and scored consistently, reducing measurement errors and variations that may arise from differences in administration or interpretation. This consistency promotes reliable and accurate assessments, allowing researchers and practitioners to make confident inferences and decisions based on the scale's results.
- Comparability is another key aspect of standardized scales. By establishing a common metric, standardized scales enable meaningful comparisons of scores and interpretations across different contexts, time periods, or populations. This comparability facilitates research replication, meta-analyses, and the integration of findings from various studies, leading to a deeper understanding of the construct being measured.
- Standardization also contributes to the validity of the scale. The process of standardization involves establishing the construct validity, content validity, and criterion-related validity of the scale. These validation processes provide evidence of the accuracy and appropriateness of the scale in measuring the intended construct, ensuring that the scale is measuring what it is intended to measure.
- Moreover, standardized scales facilitate generalizability by being applicable to diverse populations and settings. Through standardization, scales are designed to be culturally and contextually appropriate, enabling their use across different cultures, languages, and demographic groups. This broad applicability enhances the utility and relevance of the scale for a wide range of research and assessment purposes.

The use of standardized scales is prevalent across various fields, including psychology, education, healthcare, and social sciences. Examples of commonly used standardized inventory includes the Big Five Inventory (BFI), the State-Trait Anxiety Inventory (STAI) and the Beck Depression Inventory (BDI). These scales have undergone rigorous standardization processes, demonstrating strong psychometric properties and establishing their widespread use in research and clinical practice. Researchers and practitioners rely on standardized scales to make accurate assessments, inform decisions, and advance understanding in their respective disciplines.

1.3.0 Concept of cognitive ability

Cognition encompasses the process of acquiring knowledge, involving the collection, organization, and utilization of information. Cognitive skills are the essential tools individuals employ for learning, enabling them to grasp and apply what is taught in an educational context. These mental capabilities are indispensable for absorbing and comprehending content, irrespective of the specific academic subjects covered in educational institutions. The crucial factor lies in how effectively one assimilates and utilizes acquired knowledge, placing greater significance on the quality of information processing rather than the sheer volume of information possessed (Neisser, 1976).

Howard Gardner (1983) proposed the theory of multiple intelligences, suggesting that traditional notions of cognitive ability were too narrow. Instead, Gardner proposed that individuals possess at least eight different and relatively independent intelligences, each reflecting the ability to solve problems or create valuable products in a culturally relevant context. These intelligences include linguistic, musical, spatial, bodily-kinaesthetic, intrapersonal, interpersonal, logical-mathematical, and naturalist. Gardner's framework highlights the range and diversity of human cognitive abilities, asserting that individuals may have strengths in different areas and that no single measure can capture a person's total cognitive capability. The theory of multiple intelligences offers a broader perspective on cognitive ability, underscoring its multifaceted and context-dependent nature.

Psychologist Raymond Cattell (1987) introduced the concept that cognitive abilities consist of two primary categories: fluid intelligence and crystallized intelligence. Fluid intelligence is defined as the ability to employ logical thinking and problem-solving in new situations, independent of accumulated knowledge. It represents a person's ability to deal with complexity, identify patterns, and use abstract reasoning. Crystallized intelligence refers to the capacity to utilize acquired skills, knowledge, and past experiences. It represents a person's lifetime of intellectual achievement, as demonstrated largely through vocabulary and general knowledge. Cattell's concept acknowledges the multifaceted nature of cognitive abilities, emphasizing that they are not a singular, static trait, but rather a collection of dynamic and interacting skills.

Cognitive abilities, as defined by Carroll (1993), represents a set of mental capacities that include a wide array of processes such as attention, memory, language comprehension, problem-solving, and decision-making. Carroll posits that these capabilities are essential to human cognitive function, outlining them to include particular aspects such as fluid intelligence, crystallized intelligence, overall memory and learning, wide-ranging visual perception, extensive auditory perception, comprehensive retrieval capacity, broad cognitive quickness, and processing speed. Carroll's cognitive abilities model, formed from factor-analytic research, is based on three strata. The first stratum contains narrow abilities (like induction or spelling ability), the second contains broad abilities (like fluid intelligence or broad visual perception), and the third contains general intelligence (g). This comprehensive model shows cognitive abilities as a complex interplay of various mental faculties.

An influential psychologist known for his research on intelligence and cognitive ability, Sternberg proposed the Triarchic Theory of Intelligence, which posits that cognitive ability is composed of three parts: Analytical intelligence (problem-solving), creative intelligence (novel idea generation), and practical intelligence (application of knowledge to the real world). In this view, cognitive ability is not just about learning facts or how quickly one can process information, but also how creatively one can use this information and apply it to practical situations (Sternberg, 1985).

The main difference between cognitive ability and intelligence lies in their scope. Cognitive abilities are the various mental capabilities we have, while

intelligence is a general measure of one's ability to learn, adapt, and apply knowledge. However, in common usage, these terms can often be used interchangeably, and the precise definitions can depend on the context or the specific field of psychology or education.

1.3.1 Significance of cognitive ability

Cognitive abilities, encompassing skills such as memory, attention, reasoning, problem-solving, and language use, are essential to how we function in daily life, accomplish tasks, and interact with the world around us. They are fundamental to our academic achievement, occupational performance, health, social relationships, and overall quality of life. Some of the importance of cognitive abilities across these domains are given below:

1. **Academic achievement:** Cognitive abilities are foundational to academic success, affecting all stages of education from early childhood to higher education. Students' abilities to understand, absorb, and apply information, solve problems, and make decisions are all linked to cognitive abilities. In particular, intelligence, considered a comprehensive measure of cognitive ability, has been shown to be a strong predictor of academic achievement (Deary et al., 2007). Similarly, specific cognitive skills like working memory, attention control, and cognitive flexibility have been associated with academic performance across multiple subjects (Alloway & Alloway, 2010).
2. **Work performance:** Cognitive abilities are equally critical in the workplace, helping individuals to process information, solve complex problems, make decisions, and adapt to changes. Research consistently shows that cognitive abilities, especially general mental ability, are among the best predictors of job performance and training success, particularly in complex jobs that require higher levels of information processing and problem-solving (Schmidt & Hunter, 2004). Cognitive abilities are also relevant in career advancement, with higher cognitive abilities being associated with higher occupational status and income (Gottfredson, 1997).
3. **Health and well-being:** Cognitive abilities have been linked with health and longevity. Individuals with higher cognitive abilities are more likely to engage in health-promoting behaviours, understand and follow health advice, manage chronic

conditions, and navigate the healthcare system. Cognitive abilities in early life have been shown to predict health and survival later in life (Gottfredson & Deary, 2004). Furthermore, cognitive abilities can influence mental health, with impairments in cognitive functioning being associated with various mental health disorders (Millan et al., 2012).

4. **Social relationships and community engagement:** Cognitive abilities also play a crucial role in social interactions and community engagement. Social cognition, which involves understanding and interpreting social cues, empathizing with others, and predicting others' behaviour, is essential for successful interpersonal relationships (Happé & Frith, 2014). Higher cognitive abilities are also linked to increased civic engagement, such as political participation and volunteering, as they enable individuals to understand complex societal issues and contribute effectively to their communities (Deary et al., 2008).

In conclusion, cognitive abilities are central to human functioning across diverse areas of life. They influence our academic and career paths, health and well-being, social interactions, and contributions to society. Given their significance, understanding and enhancing cognitive abilities is a key focus in fields ranging from psychology and education to cognitive neuroscience and health sciences. This understanding can help to develop effective educational strategies, improve workplace training and selection processes, promote health and well-being, and foster successful social relationships and civic engagement.

1.3.2 Theories of cognitive ability

The realm of cognitive abilities has been widely theorized in psychological science. The following theories each provide a unique lens through which to view and understand cognitive ability:

1. **Spearman's Two-Factor Theory of Intelligence** (Spearman, 1904)**:** This theory developed in the early 20th century, is a seminal contribution to our understanding of human cognitive abilities. This theory proposes that all cognitive skills and aptitudes are underpinned by two fundamental factors: general intelligence ('g') and specific abilities ('s'). According to Spearman, 'g' represents the core essence of intelligence that is common to all cognitive tasks, serving as a unifying thread

among various mental abilities. In contrast, 's' factors encompass the unique contributions of specific skills or talents, such as mathematical prowess or verbal fluency. While Spearman's theory provided a groundbreaking framework for comprehending intelligence, it has faced criticism for its simplification of the intricacies of cognitive functioning. Detractors argue that it overlooks the intricate interplay of diverse cognitive processes and fails to capture the full spectrum of human intelligence. Nonetheless, Spearman's work laid a foundational cornerstone for subsequent research in the field of psychology, sparking discussions and investigations into the multifaceted nature of intelligence and the complex interrelationships among cognitive abilities, thus shaping the landscape of psychological inquiry for generations to come.

2. Cattell's Theory of Fluid and Crystallized Intelligence (Cattell, 1987)**:** Raymond Cattell's significant work in psychology greatly enhanced the understanding of cognitive capabilities through his introduction of fluid and crystallized intelligence. Fluid intelligence represents the innate ability to confront new challenges, solve intricate problems, and quickly adjust to new circumstances. It reflects an individual's innate ability to think critically, reason logically, and process information on the spot. In contrast, crystallized intelligence encompasses the wealth of knowledge and skills accumulated throughout one's lifetime, derived from education, experience, and cultural exposure. It encapsulates a person's proficiency in utilizing acquired information, such as language, facts, and specialized expertise, to excel in tasks that draw upon past learning. Cattell's ingenious distinction between these two facets of intelligence sheds light on the multifaceted nature of cognitive functioning, recognizing that individuals possess a blend of both fluid and crystallized intelligence, with their relative strengths evolving across the lifespan. This nuanced perspective underscores the interplay between inherent problem-solving abilities and the practical application of knowledge, providing a more holistic understanding of human cognitive development. Cattell's insights have significantly enriched the study of intelligence, fostering ongoing exploration into the intricate dynamics of how individuals think, learn, and adapt throughout their lives.

3. Carroll's Three-Stratum Theory of Cognitive Abilities (Carroll, 1993)**:** Building upon the foundational theories of Spearman and Cattell, John Carroll

introduced a comprehensive hierarchical model of cognitive abilities, offering a deeper understanding of human intelligence. At the core of Carroll's model is the recognition of multiple narrow cognitive abilities, each addressing specific tasks such as memory recall, problem-solving, or visual perception. These narrow abilities serve as the foundation of the hierarchy, representing the intricate and diverse components of cognitive functioning. As one ascends the cognitive hierarchy, these narrow abilities converge into broader, more general cognitive constructs, including fluid intelligence, which encompasses the capacity to tackle novel challenges and adapt to new situations, and crystallized intelligence, which embodies the application of accumulated knowledge and skills gained through experience. However, what unifies this intricate web of cognitive abilities is the overarching 'g' factor, situated at the apex of the hierarchy. 'g' factor, or general intelligence, reflects the common thread that ties together all cognitive processes, underpinning an individual's overall intellectual capabilities. Carroll's three-level model not only acknowledges the multifaceted nature of cognitive functioning but also highlights the intricate interplay between various cognitive abilities, offering a holistic perspective on human intelligence. This model, established by Carroll in 1993, continues to serve as a foundational framework for the study of cognitive abilities, providing valuable insights into the complexity and hierarchy of cognitive processes within the human brain.

4. **Gardner's Theory of Multiple Intelligences** (Gardner, 1983)**:** In a departure from the traditional notion of a singular and unitary concept of intelligence, Howard Gardner introduced a groundbreaking theory known as the Theory of Multiple Intelligences. According to Gardner's paradigm-shifting perspective, human intelligence is not a monolithic entity but a multifaceted construct composed of various distinct intelligences, each with its own unique qualities and relative independence from one another. These intelligences encompass linguistic intelligence, which involves proficiency in language and communication; logical-mathematical intelligence, focusing on analytical and problem-solving skills; musical intelligence, encompassing a deep understanding of rhythm, melody, and harmony; bodily-kinesthetic intelligence, involving physical coordination and skill; spatial intelligence, relating to the perception of spatial dimensions and navigation; interpersonal intelligence, which pertains to the ability to understand and relate to others effectively;

intrapersonal intelligence, involving self-awareness and introspection; and naturalistic intelligence, which centers on the appreciation and understanding of the natural world. Gardner's theory offers a profound shift in our understanding of human cognitive abilities, recognizing that intelligence extends far beyond traditional academic skills and assessments. By acknowledging these diverse forms of intelligence, Gardner's Theory of Multiple Intelligences promotes a more inclusive and holistic view of human competence and the wide-ranging capabilities inherent in individuals across various domains. This transformative perspective has had a profound impact on education, highlighting the importance of tailoring teaching and learning approaches to cater to the unique strengths and intelligences of each individual.

6. Sternberg's Triarchic Theory of Intelligence (Sternberg, 1985)**:** Sternberg's Triarchic Theory of Intelligence, developed by psychologist Robert Sternberg in 1985, offers a multifaceted perspective on cognitive abilities. This theory posits that human intelligence encompasses three distinct aspects: analytical, creative, and practical intelligence. Analytical intelligence pertains to problem-solving skills, involving the ability to analyze and evaluate information logically and systematically. Creative intelligence relates to the capacity to navigate novel situations and think outside the box, fostering innovative solutions and adaptability to new challenges. Practical intelligence, on the other hand, involves the skill of applying knowledge and problem-solving abilities in real-world contexts, emphasizing the capability to adapt to varying environmental demands effectively. What sets Sternberg's theory apart is its recognition that effective intelligence involves a dynamic interplay among these three dimensions, with individuals needing to balance and integrate them based on the specific demands of a given situation. This perspective acknowledges that intelligence is not a one-size-fits-all concept but a versatile and context-dependent construct that adapts to the multifaceted challenges of life. Sternberg's Triarchic Theory has made significant contributions to our understanding of intelligence, emphasizing the importance of considering diverse cognitive abilities in both educational and practical contexts.

In summary, cognitive ability is a complex construct, with diverse theories offering varying perspectives on its nature, structure, and utility. These theories collectively help provide a more comprehensive understanding of cognitive abilities.

1.3.3 Measurement of cognitive ability

Cognitive abilities encompass a range of mental capabilities, including memory, attention, reasoning, problem-solving, and language comprehension, among others. Given their complexity, a variety of methods and tools have been developed to measure cognitive abilities accurately. This discussion highlights some of these approaches:

1. Intelligence Quotient (IQ) tests: Perhaps the most recognized method for measuring cognitive abilities is through intelligence tests, often providing a score known as the Intelligence Quotient (IQ). These assessments aim to evaluate a wide spectrum of cognitive skills, covering areas such as understanding spoken and written language, interpretative and problem-solving skills through perception, working memory capacity, and the rate of mental processing. Intelligence tests can be categorized into different types based on the specific cognitive abilities they measure. Below are some of the categories, with examples of tests that fall under each:

a) Verbal intelligence tests: Verbal intelligence tests, a category of cognitive assessments, focus on evaluating an individual's verbal reasoning and comprehension abilities. These tests commonly incorporate tasks that require respondents to define words, recognize analogies, and provide answers based on passages of text. For instance, in the Wechsler Adult Intelligence Scale (WAIS), a widely-used intelligence test, the Verbal Comprehension Index measures an individual's capacity to understand and respond to verbal information, including vocabulary and reading comprehension. These assessments play a crucial role in gauging linguistic proficiency and cognitive aptitude, contributing valuable insights into an individual's verbal cognitive skills and their overall intellectual capabilities (Wechsler, 1981).

b) Non-verbal intelligence tests: Non-verbal tests are specifically crafted to evaluate cognitive capabilities without relying on language skills, offering distinct advantages for individuals facing language impairments or hailing from diverse linguistic backgrounds. These assessments typically encompass tasks that emphasize pattern recognition, visual analogies, and problem-solving through the use of images, symbols, or diagrams. A prominent example of a non-verbal intelligence test is the Raven's Progressive Matrices, renowned for its capacity to measure abstract reasoning and non-verbal problem-solving abilities. By focusing on visual and spatial cognition,

non-verbal tests provide a fair and inclusive means of assessing intelligence across a wide range of individuals, transcending language-related barriers (Raven, 2003).

c) Performance intelligence tests: Performance tests, often referred to as perceptual or non-verbal reasoning tests, are assessments that gauge an individual's abilities in tasks demanding visual-motor coordination, spatial processing, and non-verbal reasoning skills. These evaluations do not heavily rely on language and prioritize the execution of specific actions or problem-solving activities that involve visual and spatial cognition. A prominent example of this type is the Performance Scale of the Wechsler Adult Intelligence Scale (WAIS), which assesses non-verbal cognitive abilities such as pattern recognition and spatial processing. Another illustration is the Performance IQ portion of the Stanford-Binet Intelligence Scale, as noted by Roid in 2003. Performance tests offer a valuable means of assessing cognitive abilities beyond verbal or language-dependent measures, making them particularly relevant for diverse populations (Roid, 2003).

2. Domain-specific cognitive tests: There exists a wide array of cognitive tests tailored to evaluate specific mental faculties. One such test is the Stroop Test, which assesses cognitive flexibility and selective attention. It accomplishes this by requiring participants to identify the colour of ink in which words are printed, disregarding the actual word written. The challenge arises when the words themselves are names of different colours, creating a conflict between reading and identifying colours (Stroop, 1935). Another notable example is the Wisconsin Card Sorting Test, introduced by Grant and Berg in 1948. This test is a measure of problem-solving, cognitive flexibility, and the ability to adapt and maintain mental categories, making it valuable for understanding cognitive processes and executive functions (Grant & Berg, 1948).

3. Neuropsychological test batteries: Comprehensive neuropsychological assessments play a crucial role in clinical settings, offering a thorough evaluation of cognitive function, particularly in cases of brain injury or neurological disorders. One notable tool, the Halstead-Reitan Neuropsychological Battery encompasses a wide spectrum of cognitive abilities. It assesses attention, concentration, memory, language proficiency, spatial processing, and executive functions, providing clinicians with valuable insights into a patient's cognitive profile (Reitan & Wolfson, 1993). Similarly, the Luria-Nebraska Neuropsychological Battery, based on the pioneering work of

neuropsychologist A.R. Luria introduced a comprehensive assessment of cognitive functioning, further enhancing our understanding of the intricate relationship between brain function and behaviour in clinical contexts (Golden et al., 1985).

4. **Computerized cognitive assessments:** In recent years, computer-based assessments have become increasingly prominent in the field of cognitive testing, primarily owing to their precision in recording responses and their ability to adapt to individual performance levels. Two notable examples of such assessments are the Cogstate battery and the Cambridge Neuropsychological Test Automated Battery (CANTAB). These sophisticated tools encompass a wide spectrum of cognitive domains, including memory, attention, processing speed, and executive function. What sets them apart is their incorporation of visually engaging tasks, which not only enhance participant engagement but also provide valuable insights into cognitive abilities. This shift towards technology-driven assessments has revolutionized the way we evaluate and understand cognitive function (Robbins et al., 1994).

While these tests are designed to provide objective measures of cognitive abilities, it's important to remember that they are not definitive. Cognitive abilities can be influenced by numerous factors such as an individual's physical health, mental health, education, and cultural background. Furthermore, cognitive abilities are complex and can't always be fully captured by standardized tests. As such, these assessments should form part of a broader evaluation of an individual's cognitive function, incorporating other sources of information such as behavioural observations, self-reports, and reports from others who know the individual well.

1.3.4 Cognitive ability in Mizoram

Cognitive ability refers to the mental capacity of individuals to process information, learn, think, reason, and solve problems. It is an essential aspect of human intelligence and plays a crucial role in academic, professional, and personal success (Neisser, 1976). Like any other region, cognitive ability is present in the population of Mizoram, and individuals vary in their cognitive skills and capabilities.

In Mizoram, cognitive abilities are shaped by various factors, including genetics, early childhood experiences, education, environment, and access to

opportunities for cognitive development. Some factors that may influence cognitive ability in Mizoram are:

- **Education:** Education is a fundamental factor influencing cognitive ability. In Mizoram, efforts have been made to improve the education system and provide quality education to students. Access to schools, colleges, and other educational institutions is vital for cognitive development. Significant strides have been made in areas such as literacy rates and education with Mizoram boasting as one of the highest literacy rates in India.
- **Socioeconomic factors:** Socioeconomic factors, such as income level, access to resources, and living conditions, can influence cognitive development. Mizoram's socioeconomic status has been on an upward trajectory, albeit at a gradual pace. As one of the states in the north-eastern region of India, it has historically faced several challenges, including geographic isolation, limited infrastructure, and varied social issues. However, concerted efforts towards development and progress have resulted in improvements in the state's socioeconomic condition.
- **Early childhood experiences:** Early childhood experiences play a critical role in cognitive development. Exposure to stimulating environments, early learning opportunities, and supportive parenting can lay a strong foundation for cognitive abilities in later life. Mizoram still faces challenges in early childhood care and education, particularly in rural areas, such as limited access to quality early childhood education services and resources. Efforts are underway to overcome these issues, aiming to ensure that every child in Mizoram gets a good start in life.
- **Access to information and technology:** The availability of information and access to modern technology can have a significant impact on cognitive ability. With increasing digitalization and internet penetration, individuals in Mizoram have access to a vast pool of knowledge and resources that can contribute to cognitive growth.
- **Traditional knowledge and practices:** Mizoram has a rich cultural heritage and traditional knowledge systems. Indigenous practices and folk wisdom may influence cognitive processes and problem-solving skills in unique ways.
- **Migration and exposure to different cultures:** Migration and exposure to different cultures and environments can shape cognitive abilities. People in Mizoram

may experience cognitive diversity due to interactions with individuals from other regions and cultures.

- **Language and multilingualism:** Mizoram is a culturally diverse state with several tribes, some having their own language and dialects. Multilingualism is prevalent, and individuals who can switch between languages may exhibit cognitive flexibility and enhanced executive functions.

By addressing the above-mentioned factors and providing inclusive and supportive learning environments, Mizoram can continue to foster cognitive growth and empower individuals to reach their full intellectual potential, contributing to the overall progress and prosperity of the state.

1.4.0 Relationship between life skills and cognitive ability

The relationship between life skills and cognitive ability is a complex and multifaceted one, with numerous research studies shedding light on this intriguing connection. Life skills encompass a wide range of competencies that enable individuals to effectively navigate the challenges of daily life, while cognitive ability pertains to a person's mental capacity for learning, reasoning, and problem-solving (Neisser, 1976; WHO, 1997).

Research has consistently shown that cognitive ability plays a pivotal role in the development and utilization of life skills. A study by Sánchez-Hernando et al. (2021) demonstrated a moderate correlation between cognitive and social skills, indicating that individuals with stronger cognitive abilities tend to exhibit enhanced social life skills. Cognitive skills such as critical thinking, problem-solving, and decision-making provide the foundation upon which effective communication, adaptability, and interpersonal relationships are built.

Furthermore, cognitive abilities are closely intertwined with problem-solving and decision-making, which are integral components of life skills. Individuals with stronger cognitive abilities tend to make more informed decisions and solve problems more effectively. These cognitive skills contribute to better life outcomes, emphasizing the importance of cognitive ability in the context of life skills (Sánchez-Hernando et al., 2021).

Emotional regulation is another essential life skill that is closely linked to cognitive abilities. The ability to understand and manage one's emotions requires cognitive skills like self-awareness and self-control. Research indicates that individuals with higher cognitive abilities tend to have better emotional regulation skills, which are essential for success in various life domains (Bastian et al., 2005). This suggests that cognitive abilities contribute significantly to emotional intelligence, a vital component of life skills.

Moreover, lifelong learning, a critical life skill in today's rapidly changing world, is heavily influenced by cognitive abilities. People with strong cognitive abilities tend to be more open to acquiring new knowledge and skills throughout their lives, which is essential for personal and professional growth (Kase & Kawagoe, 2021). Cognitive abilities facilitate the process of acquiring new skills, adapting to change, and staying relevant in various life contexts.

Research studies have consistently highlighted the intricate relationship between cognitive ability and life skills. Cognitive abilities underpin the acquisition and application of life skills, influencing problem-solving, decision-making, emotional regulation, and the capacity for lifelong learning. Understanding this relationship is crucial for promoting the development of life skills, as it underscores the role of cognitive abilities in equipping individuals to navigate the complexities of modern life effectively.

1.5.0 Rationale of the study

The study of life skills and cognitive abilities of college students in Mizoram is significant given the unique socio-cultural milieu of Mizoram, coupled with the distinct developmental stage college students find themselves in. An important yet relatively unexplored field is the association between life skills and cognitive abilities, especially in the context of higher education in Mizoram. Cognitive abilities underlie many life skills. For instance, problem-solving, a key life skill, involves cognitive processes such as attention, memory, and reasoning. Meanwhile, honing life skills may also contribute to enhancing cognitive abilities. For example, effective communication, a vital life skill, can potentially stimulate cognitive functions related to language processing and social cognition. However, empirical research examining

these potential associations is sparse, particularly in the Indian context. This study aims to fill this gap and contribute to our understanding of the intricate relationship between life skills and cognitive abilities. Also, despite the obvious importance of life skills and cognitive abilities in academic and life success, there is a scarcity of research focusing on these areas among college students in North Eastern India, particularly in Mizoram. This study can significantly contribute to bridging this research gap and expanding the body of knowledge in this area.

As education systems worldwide acknowledge the importance of holistic development, the significance of teaching life skills alongside traditional academic knowledge is increasingly recognized. Investigating the interplay between life skills and cognitive abilities among college students in Mizoram may have profound implications for educational practices and policies. The findings can guide curriculum development to incorporate essential life skills and pedagogical strategies to foster both life skills and cognitive abilities effectively. The insights gained can help design intervention programs or workshops to enhance students' life skills and cognitive abilities, thereby promoting their overall development.

Another important point for the study is that, college years mark a pivotal stage in an individual's life, characterized by the transition to adulthood. This period involves significant changes, such as increased independence, new social roles, career planning, and, in some cases, relocation, all of which demand a robust set of life skills and cognitive abilities. Therefore, examining these facets in the context of Mizoram can provide necessary insights into facilitating this transition and identifying potential areas of support needed for students.

The enhancement of cognitive abilities and life skills is crucial for the socio-economic progress of any region. These skills are pivotal for navigating the world of work, making informed decisions, and leading a productive life. Therefore, the study could provide significant insights for policymakers and stakeholders in Mizoram to bolster educational policies and programs, which, in turn, could contribute to the region's overall socio-economic advancement.

Last but not the least, in a state like Mizoram, not much importance is given to developing life skills or even assessing the presence of it. A Life Skills Inventory has never been constructed in the context of Mizoram and assessing the life skills of

college students in comparison to their cognitive abilities has never been done before. This is the reason why the present study has been proposed. The proposed study seeks to answer the research questions given below:

1. Has life skills inventory ever been constructed and standardized for college students in Mizoram?
2. What levels of life skills do college students in Mizoram possess?
3. What levels of cognitive abilities do college students in Mizoram possess?
4. Do male college students have better life skills as compared to female college students?
5. Do male college students differ from female college students in their cognitive abilities?
6. Are there any differences in the life skills of arts, science and commerce college students?
7. Are there any differences in the cognitive abilities of arts, science and commerce college students?
8. Are there any differences in the life skills of college students with reference to their father's working status?
9. Are there any differences in the cognitive abilities of college students with reference to their father's working status?
10. Are there any differences in the life skills of college students with reference to father's educational qualification?
11. Are there any differences in the cognitive abilities of college students with reference to father's educational qualification?
12. Is there any relationship between life skills and cognitive abilities of college students?

1.6.0 Statement of the problem

The problem addressed in this thesis is the lack of a standardized and validated Life Skills Inventory specific to college students in Mizoram, as well as a limited understanding of the relationship between life skills and cognitive abilities among this population. This knowledge gap hinders the effective assessment and development of essential life skills and their potential impact on cognitive abilities among college

students in Mizoram. Therefore, there is a need to construct and standardize a reliable Life Skills Inventory tailored to the unique context of Mizoram, and to investigate the relationship between these identified life skills and cognitive abilities in order to enhance educational practices and promote holistic development among college students in the region.

The problem proposed to be investigated reads as, **"Construction and Standardization of Life Skills Inventory and Relationship between Life Skills and Cognitive Abilities of College Students in Mizoram"**.

1.7.0 Objectives of the study

1. To construct and standardize a life skills inventory for college students.
2. To assess the overall and component-wise level of life skills of college students in Mizoram.
3. To assess the level of cognitive abilities of college students in Mizoram.
4. To compare the different components of life skills and cognitive abilities of college students with reference to their gender.
5. To compare the different components of life skills and cognitive abilities of college students with reference to their stream of study.
6. To compare the different components of life skills and cognitive abilities of college students with reference to their father's working status.
7. To compare the different components of life skills and cognitive abilities of college students with reference to their father's level of educational qualification.
8. To find out the relationship between different components of life skills and cognitive abilities of college students.
9. To make suggestions for developing life skills and enhancing cognitive abilities of college students in Mizoram.

1.8.0 Hypotheses of the study

1. There is no significant difference in the life skills of college students with reference to gender.

2. There is no significant difference in the thinking skills of college students with reference to gender.
3. There is no significant difference in the social skills of college students with reference to gender.
4. There is no significant difference in the emotional skills of college students with reference to gender.
5. There is no significant difference in the cognitive abilities of college students with reference to gender.
6. There is no significant difference in the life skills between science and commerce college students.
7. There is no significant difference in the life skills between science and arts college students.
8. There is no significant difference in the life skills between commerce and arts college students.
9. There is no significant difference in the thinking skills between science and commerce college students.
10. There is no significant difference in the thinking skills between science and arts college students.
11. There is no significant difference in the thinking skills between commerce and arts college students.
12. There is no significant difference in the social skills between science and commerce college students.
13. There is no significant difference in the social skills between science and arts college students.
14. There is no significant difference in the social skills between commerce and arts college students.
15. There is no significant difference in the emotional skills between science and commerce college students.
16. There is no significant difference in the emotional skills between science and arts college students.
17. There is no significant difference in the emotional skills between commerce and arts college students.

18. There is no significant difference in the cognitive abilities between science and commerce college students.
19. There is no significant difference in the cognitive abilities between science and arts college students.
20. There is no significant difference in the cognitive abilities between commerce and arts college students.
21. There is no significant difference in the life skills of college students with reference to father's working status.
22. There is no significant difference in the thinking skills of college students with reference to father's working status.
23. There is no significant difference in the social skills of college students with reference to father's working status.
24. There is no significant difference in the emotional skills of college students with reference to father's working status.
25. There is no significant difference in the cognitive abilities of college students with reference to father's working status.
26. There is no significant difference in the life skills between under-matric fathers and graduate fathers of college students.
27. There is no significant difference in the life skills between graduate fathers and post-graduate fathers of college students.
28. There is no significant difference in the life skills between under-matric fathers and post-graduate fathers of college students.
29. There is no significant difference in the thinking skills between under-matric fathers and graduate fathers of college students.
30. There is no significant difference in the thinking skills between graduate fathers and post-graduate fathers of college students.
31. There is no significant difference in the thinking skills between under-matric fathers and post-graduate fathers of college students.
32. There is no significant difference in the social skills between under-matric fathers and graduate fathers of college students.
33. There is no significant difference in the social skills between graduate fathers and post-graduate fathers of college students.

34. There is no significant difference in the social skills between under-matric fathers and post-graduate fathers of college students.
35. There is no significant difference in the emotional skills between under-matric fathers and graduate fathers of college students.
36. There is no significant difference in the emotional skills between graduate fathers and post-graduate fathers of college students.
37. There is no significant difference in the emotional skills between under-matric fathers and post-graduate fathers of college students.
38. There is no significant difference in the cognitive abilities between under-matric fathers and graduate fathers of college students.
39. There is no significant difference in the cognitive abilities between graduate fathers and post-graduate fathers of college students.
40. There is no significant difference in the cognitive abilities between under-matric fathers and post-graduate fathers of college students.
41. There is no significant relationship between different life skills and cognitive abilities of college students.
42. There is no significant relationship between thinking skills and cognitive abilities of college students.
43. There is no significant relationship between social skills and cognitive abilities of college students.
44. There is no significant relationship between emotional skills and cognitive abilities of college students.

1.9.0 Operational definitions of key term used

Construction and standardization: Construction and standardization of a tool, such as a survey or test, refer to its development and validation processes. Construction involves creating the tool's objectives, format, and items based on the data it needs to collect. Standardization is the process of testing the tool on a representative sample to ensure that it is reliable and valid. This step helps establish norms or standards for interpreting future responses, ensuring the tool's effectiveness for its intended use.

Life skills inventory: A life skills inventory constitutes a type of assessment tool meticulously crafted to ascertain an individual's proficiencies across a spectrum of essential life skills.

Life skills: Life skills comprise a set of 10 core skills, listed by WHO, that are vital for fostering a well-rounded and balanced approach to life. These skills aid individuals in gaining self-awareness, maintaining composure, and exhibiting composed and unflustered thinking in their daily lives. For the present research, life skills will be quantified through the utilization of a 'Life Skills Inventory,' a tool that the investigator will design and develop.

Cognitive abilities: Cognitive abilities encompass faculties such as logical reasoning, strategic planning, problem-solving, abstract thinking, the comprehension of complex ideas, rapid learning, and the ability to derive knowledge from experiences. In the ongoing research, cognitive abilities shall be quantified through the evaluation of students' performance in Raven's Standard Progressive Matrices.

College students: College students are individuals who are enrolled in educational institutions that provide undergraduate degree programs. In the context of the current research, college students from diverse academic backgrounds, including science, commerce, and arts disciplines, have been considered as the study population.

Mizoram: Mizoram, located in North-East India, has its capital in Aizawl and is known as the 'Land of the Mizos'. Following India's independence from British rule in 1947, it was established as the Lushai Hills district within the Assam government's jurisdiction. In 1972, it was designated as a union territory and renamed 'Mizoram'. Eventually, in 1986, Mizoram attained the status of a full-fledged state within the Indian federation.

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CHAPTER II
REVIEW OF RELATED LITERATURE

This chapter focuses on analysing existing literature. Its objective is to grasp the nature and scope of studies previously conducted in the same area, identifying what has already been examined before initiating the current research. Reviewing related literature and previous research not only offers a conceptual framework for the proposed research but also provides guidance on methodologies, procedures, data sources, and statistical approaches suitable for addressing the chosen problem. Through this review, the researcher is equipped to develop hypotheses grounded in the context and logic of the study. This process involves consulting a range of sources like books, dissertations, manuals, academic journals, articles, and theses for reference.

The literature review is categorized into two main sections: Studies conducted in India and Studies done abroad.

2.1.0 Studies conducted in India:

Studies conducted in India were further sub-divided into two categories:

1. Studies on life skills conducted in India.
2. Studies on cognitive abilities conducted in India.

2.1.1 Studies on life skills conducted in India

Yadav and Iqbal's (2009) study titled "Impact of life skill training on self-esteem, adjustment, and empathy among adolescents," involved a total sample of 60 students, with an equal number of boys and girls, from Hans Raj Model School in Punjabi Bagh. These students participated in a life skills training program delivered by Expressions India. Measurements of self-esteem, adjustment in school, and empathy levels were taken using specific inventories and questionnaires, both before and after the training. Post-training assessments were conducted after 5 months, revealing significant improvements in self-esteem, emotional adjustment, educational adjustment, total adjustment, and empathy among the subjects. However, no

significant differences were observed in social adjustment before and after the training. Overall, the study demonstrated the effectiveness of life skill training in fostering positive changes in adolescents' attitudes, thoughts, and behaviors, thereby creating a supportive environment for their development.

Srikala and Kishore's (2010) study titled "Empowering adolescents with life skills education in schools–School mental health program: Does it work?", explored the implementation and impact of a life skills education (LSE) program on adolescents' well-being. The research evaluated the impact of the NIMHANS life skills education model by contrasting 605 adolescents who were part of the program with another group of 423 adolescents of similar age, gender, and socioeconomic background from neighbouring schools not involved in the program. Findings from this study revealed that the adolescents who participated in the life skills education program showed marked enhancements in different areas of their lives. These improvements included better self-esteem, perceived coping abilities, overall adjustment, specifically with teachers, and prosocial behavior. Importantly, the study found no notable differences in psychopathology or in adapting to home and peer environments between the two groups. Additionally, the study found that life skill educator-teachers, who were involved in the program, observed positive changes in the students' classroom behavior and interactions.

Singh and Kaur (2013) conducted a study titled "Life Skills among adolescents: A study of Sangrur district of Punjab". The primary objective was to investigate the prevalence of life skills among a randomly selected sample of 300 adolescents from Sangrur district in Punjab. The researchers employed Sharma's Life Skills scale (2003) to assess the level of life skills among the adolescents. The findings from the descriptive statistics indicated that the adolescents in the sample possessed life skills at an above-average level. Additionally, the outcomes of the t-tests indicated that the disparities in life skills levels between male and female adolescents were not statistically significant. However, significant disparities were observed in terms of location, type of school, caste, and across varying levels of academic achievement among the adolescents. This study shed light on the distribution of life skills among adolescents in Sangrur district, highlighting the influence of socio-demographic factors on these skills.

In Anuradha's (2014) study titled "Life Skills and Self-Concept of Adolescents," the research aimed to evaluate the life skills and self-concept of 9th-grade adolescents in Tirupati town. The study sample included 100 students, comprising 50 boys and 50 girls, who were selected through a systematic, stratified random sampling technique from four high schools. To assess the adolescents' life skills, the Life Skills Self Rating Scale and Self Concept Rating Scale were employed to measure life skills and self-concept. The study results showed that the adolescents displayed a fairly good level of life skills and had average self-concept scores. There was a noticeable moderate correlation between life skills and elements like the father's level of education, self-concept scores, and household income ($p<0.05$). Additionally, a significant correlation was found between the adolescents' life skills and their self-concept scores. This suggests a significant relationship between the development of life skills and self-concept among adolescents, highlighting the interconnection between these two aspects in shaping the overall well-being and growth of young individuals.

Kaur (2014) conducted a study on "Life Skills among School Going Adolescents in Relation to Certain Personal Variables". The study encompassed 200 adolescents attending government and private schools in the Patiala, Fatehgarh Sahib, and Mansa districts of Punjab. Data was gathered using the Life Skills Scale formulated by Sharma in 2003, along with background information sheets designed by the researcher. Results from this research showed that both female and rural adolescents demonstrated superior life skills in comparison to their male and urban peers. Furthermore, adolescents whose fathers and mothers had lower levels of education demonstrated significantly greater life skills than those with more educated parents. Additionally, adolescents whose parents were engaged in business occupations displayed higher life skills compared to those with different parental occupations. The research also revealed that school-going adolescents with non-working mothers exhibited significantly more life skills than those with working mothers.

Josephine and Selvakumar (2015) conducted a study on "A Study of Life Skills among College Students". This research encompassed a diverse cohort of students, both male and female, hailing from various academic disciplines, including Medicine,

Engineering, Education, Arts, and Science Colleges. To evaluate the life skills of these students, the researchers employed the Life Skills Inventory developed by Thangadurai, S. in 2012. The study encompassed a sample size of 498 students, thoughtfully selected through a random sampling technique. Throughout the course of the investigation, the collected data underwent rigorous analysis, employing statistical methods, particularly Percentile Analysis and Differential Analysis. The key finding of the study revealed a substantial distinction among college students with regard to their gender and chosen field of study. This significant observation highlights the influence of both gender and academic specialization on the cultivation and manifestation of life skills among college students, elucidating the intricate interplay between personal attributes and educational backgrounds in moulding the proficiency of life skills within the collegiate environment.

In Kumar's (2015) study titled "Study on the relationship between parental influence and life skills among high school students", the researcher explored the connection between parental influence and the development of life skills in high school students. The research included 300 students, distributed as 80 from Government schools, 100 from Government-Aided schools, 80 from Private schools, and 40 from Corporation schools. A tailor-made questionnaire was used to evaluate the relationship between Parental Influence and Life Skills. The results demonstrated a meaningful and positive link between the impact of parental involvement and the development of life skills in high school students. Moreover, the research indicated that several independent variables also played a noteworthy role in influencing both parental influence and life skills development in this demographic. This study sheds light on the importance of parental involvement in shaping the life skills of high school students and highlights the complexity of the factors involved in this process.

Prakash and Devi (2015) did a study on "Life skills assessment among undergraduate students". The primary objective was to assess the level of life skills among undergraduate students and investigate whether variations in life skills exist based on personal and demographic factors. The research involved a sample of 100 undergraduate students, comprising both males and females, drawn from government, government-aided, and private colleges in the vicinity of Chennai. The researchers employed the Life Skills Assessment Scale, a tool developed by themselves for data

collection. Data analysis was conducted using the SPSS package, revealing that the level of life skills among undergraduate students was found to be moderate. Furthermore, the study identified significant differences in life skills concerning the students' field of study, medium of instruction, place of residence, and whether they had attended any life/soft skill courses. However, no significant differences were observed in life skills with respect to gender and the type of management of the colleges.

Buvaneswari and Juliet (2017) did a study on "Assessment of Life Skills among First Year B.Sc. Nursing Students of Selected Nursing College, Tamil Nadu". The study utilized a Cross-Sectional Descriptive Survey approach to appraise the life skills of 40 first-year B.Sc. nursing students at a selected nursing college in Tamil Nadu. For this assessment, the researchers used The Life Skills Assessment Scale, which was formulated by Radhakrishnan and colleagues in 2009.The findings of the study indicated that the mean life skills score among the first-year nursing students was 369±23. In terms of the global life skills score, the majority of the students, 30 out of 40 (75%), had average life skills, while 2 students (5%) scored very low in life skills. Importantly, the study did not find any significant association between life skills scores and the socio-demographic variables of the students. The absence of a significant association with socio-demographic factors underscores the need for targeted interventions to enhance life skills among nursing students.

Ghasemian and Kumar (2017) conducted a study titled "Effect of life skills training on psychological distress among male and female adolescent students". This study included 200 adolescents, balanced in terms of gender, who were divided into two groups: one experimental group that underwent eight sessions of life skills training and a control group that did not participate in these sessions. The level of psychological distress was assessed using the Kessler Psychological Distress Scale, both before and after the training intervention. The study's findings demonstrated a significant reduction in psychological distress among the experimental group of adolescents who received life skills training. Notably, the results indicated that the gender of the participants did not play a differential role in influencing the reduction of psychological distress due to life skills training. This research underscores the positive impact of life skills training in mitigating psychological distress among adolescent

students, regardless of gender.

In the research conducted by Yadav and Pingle (2017) titled "Development of Life Skills Programme and Study Its Effect on Life Skills Ability of Students," the primary objective was to create a life skills program specifically designed for adolescent students and examine its impact on enhancing their life skills. The study utilized a quasi-experimental design with pre and post-tests for non-equivalent groups. Researchers constructed a comprehensive Life Skills Ability test comprising 109 items to assess the students. In this study, 44 students were assigned to an experimental group, and 37 students were in a control group, drawn from two schools in Mumbai. The experimental group underwent a life skills training program for 48 hours spread over three months, employing diverse interactive teaching techniques. The entire program duration was 60 hours. Analytical methods like t-tests and Wolf's Formula were used for data analysis. The findings showed that the life skills training moderately improved the life skills abilities of students in the experimental group.

Daisy (2018) did a study on "Impact of Life Skills Training on Enhancing Study Skills and Academic Performance of School-Going Adolescents". The study's population consisted of school-going adolescents in Class 8, studying in an ICSC private school in Mathura and a CBSE private school in Ghaziabad, Uttar Pradesh. The sample for the study included a total sample of 189 students from the CBSE school and 126 students from the ICSE school, both of which were under private management. To assess the life skills of adolescents, the Life Skills Assessment Scale (LSAS) developed by Radhakrishnan et al. in 2010 was employed. The study's key outcomes underscored the beneficial effect of life skills training on the study skills and academic achievements of adolescents attending school. It was found that life skills had significant correlations with various factors, including the students' residential area, the number of siblings they have, as well as the educational level and occupations of their parents.

Dange et al. (2018) conducted a research on "The Life Skills of Male and Female Post-Graduate Students of Kuvempu University". The primary objective was to assess and analyse the level of life skills among post-graduate students at Kuvempu University, situated in Shimoga, Karnataka, India. Additionally, the study aimed to investigate the correlation between various life skills among these post-graduate

students. This research utilized a descriptive survey methodology, with a sample of 200 post-graduate students from different departments at Kuvempu University, chosen through a simple random sampling approach. The key findings of the study revealed that female post-graduate students exhibited higher levels of life skills when compared to their male counterparts. Furthermore, the research identified significant relationships among different life skills among the post-graduate students.

Kataria (2018) conducted a research titled "Study on Cognitive Life Skills Among Senior Secondary School Students" and followed a descriptive research design. The sample for this study consisted of 120 students randomly selected from both residential and non-residential schools in Sri Ganganagar, Rajasthan. To measure cognitive life skills, the researcher utilized a Cognitive Life Skill Test developed specifically for this study. The study's findings revealed that the majority of the students possessed average levels of cognitive life skills. Interestingly, the results indicated that there was no significant gender-based differences in cognitive life skills among the students. However, the study did identify a significant difference in cognitive life skills based on the types of schools attended by the students.

Rani et al. (2018) conducted a study titled "Attitude of College Students towards Life Skills". They gathered data from a sample of 100 students from various undergraduate courses in Rohtak, using purposive random sampling. For data collection, they employed the "Life Skill Assessment Scale" developed by Dr. Radha Krishnan Nair in 2010. The findings of the study indicated that students from private institutions exhibited a higher level of life skills compared to their counterparts from government institutions. However, there was no significant difference in life skills among students based on their chosen academic streams. Additionally, the results revealed that male students possessed more life skills compared to their female counterparts. The study suggested that enhancing life skills among college students could be achieved through various intervention programs, workshops, and by integrating life skills education as an essential part of the overall educational curriculum.

Rayanagoudar and Pattanashetti (2019) conducted a study on "Effectiveness of Life-Skills Education on Communication and Self-awareness Skills of 9th Standard Secondary School Students of Gadag District". Employing an experimental research

method, they randomly selected 100 9th standard students from secondary schools in Gadag city, Karnataka and divided them into two groups: a control group and an experiment group. In this study, Analysis of Covariance (ANCOVA) was applied to examine the distinct impacts across two groups, using the pretest scores as a controlling factor for the post-test and subsequent test outcomes, which assessed the overall life skills and their specific elements. The results revealed that, in the case of communication skills, there were no significant differences between the control and experiment groups in pretest scores. However, posttest and delayed posttest communication skills scores were significantly higher in the experiment group compared to the control group. Similarly, for self-awareness scores, pretest scores were similar in both groups, but posttest self-awareness scores were significantly higher in the experiment group compared to the control group. This suggests that life-skills education had a positive impact on enhancing communication and self-awareness skills among the students.

Shankari and Eagavalli (2019) did a study on "A Study on Life Skills among Arts and Science College Students". The study included 300 individuals between 18 and 28 years old from six different colleges in Coimbatore. The Life-skills Development Inventory-College Form was used to evaluate their life skills in areas including interpersonal communication, decision-making, health management, and identity formation. Results showed notable variations in the life skills of students from arts and science colleges, influenced by variables such as the location of their college, the group types they belonged to, and their parents' educational background. However, there was no significant difference observed based on Gender, Medium of Instruction, Type of Family, and Parents' Income. This research sheds light on the importance of life skills among college students and the various factors that influence their development, emphasizing the role of education institutions and parental education.

Rani and Neeraj (2020) did a study titled "A Study on Life Skill of Senior Secondary Students". They aimed to assess life skills across all dimensions among senior secondary students. They randomly selected a sample of 100 students from both government and private schools in the Sonepat district, Haryana. To collect data, they utilized the Life Skill Scale developed by M.N. Vranda in 2009. The study's findings indicated notable disparities in life skill levels between male and female students. In

particular, female students displayed superior average scores across various life skill areas compared to males. These areas encompassed decision-making, problem-solving, empathy, self-awareness, effective communication, managing interpersonal relationships, handling emotions, dealing with stress, as well as creative and critical thinking abilities.

Sridevi and Amuthavalli (2020) did a research study on "A Study on Life Skills of B.Ed. students". The researchers employed a survey method to gather data and selected a sample of 100 B.Ed. students from various Colleges of Education in Anantapur district using a simple random sampling technique. The researchers collected data using a Life Skills Assessment Scale developed specifically for the study. The analysis, conducted through t-tests, revealed significant differences in the life skills of B.Ed. students concerning gender, residential background, and entry-level qualification. However, no significant difference was observed in the life skills of B.Ed. students based on the methodology chosen.

Mary and Rama (2021) did a study on "Identifying Life Skills Of B.Ed Trainees In Relation To Gender, Types Of College And Types Of Management". The primary objective was to assess the life skills of B.Ed. trainees in Chennai District, Tamil Nadu. The research employed a survey methodology, involving a sample of 1200 B.Ed. trainees from various colleges in Chennai District. Data collection was carried out using a life skills assessment tool developed and validated by the investigators. The collected data underwent thorough statistical analysis, including measures such as mean, standard deviation, and t-tests. The study's findings indicated significant differences in life skills between male and female B.Ed. trainees, as well as variations based on the types of colleges and management. This research sheds light on the significance of gender and institutional factors in shaping the life skills of B.Ed. trainees.

Prakash and Topno (2021) conducted a study titled "Life skills of B.Ed. trainees in Patna District". The study aimed to discern whether there existed any notable disparities in the life skills of B.Ed. Trainees based on various factors such as gender, types of institutions, medium of study, pedagogical specialization, and educational qualifications. The study encompassed the entire population of B.Ed. Trainees in Patna district, with a sample size of 352 B.Ed. Trainees selected using random sampling

techniques. The research utilized a specifically designed and validated instrument, the Life Skills Assessment Scale (LSAS), to gather data. Analysis of this data was performed using statistical techniques such as mean, standard deviation, t-tests, and ANOVA. The results of the analysis demonstrated that there were no notable disparities in the life skills among B.Ed. trainees with respect to variables like gender, the category of educational institutions, language of instruction, areas of pedagogical focus, or academic qualifications.

Rajkumari et al. (2021) did a study on "A Comparative Study of Life Skills among Graduate Students of Private College and Govt. College". This research comprised a sample of 100 graduate students, randomly chosen from both private and government colleges in Sonipat, Haryana. The "Life Skills" instrument, devised and standardized by M.N. Vranda in 2009, was employed for data collection. The analysis of the collected data was conducted using statistical methods like mean, standard deviation, and t-tests. The outcomes of the study revealed that female students in government colleges exhibited lower levels of adjustment in life skills as compared to their male counterparts. Additionally, it was found that students from government colleges generally had a lower level of life skills adjustment in comparison to students from private colleges. However, there was no significant difference in the life skills of graduate students based on their gender and the type of college they attended.

Sharma et al. (2021) conducted a research study on "A Study Of Life Skills Of B. Ed. Teacher Trainees Of Tonk District" which aims to assess the life skills of B.Ed. teacher trainees in Tonk District, Rajasthan, and explore potential variations in life skills levels based on gender and locality. The research employed a Descriptive Survey Method, involving a sample of 200 trainees selected through Simple Random Sampling Technique. A self-made Life Skill Evaluation Inventory with 58 statements and a 5-point rating scale was used. Data analysis included percentage calculations and t-tests. The results highlighted a very high level of life skills among B.Ed. Teacher Trainees, underscoring the significance of these skills for young individuals in addressing the challenges posed by the contemporary COVID-19 situation.

Dey et al. (2022) prepared a paper on "The Status of Life Skill Education in Secondary Schools - An Evaluative Study". The main aim of the study was to assess the existing state of life skills education in adolescents and determine the essential life

skills needed to address educational setbacks. The research was conducted among high school students in the states of Madhya Pradesh, Bihar and Chhattisgarh. Data collection involved the use of a pretested questionnaire, and statistical analysis was performed using various methods, including t-test, one-way ANOVA, and Chi-square test. The study population had a mean age of 16.46±1.04, with an age range between 14 and 18 years. The study's results indicated that a majority of adolescents, approximately 52 percent, had a moderate level of life skills. Additionally, about 25.7 percent of adolescents displayed a high level of life skills, while 22 percent showed a low level of life skills. The study emphasized the significance of life skills education in enabling students to make informed and logical choices in their lives. It enhances their capacity to meet social objectives and handle a wide range of situations effectively. The study underscores the significance of incorporating life skill education to assist adolescents in overcoming life challenges.

Lalrinmawii and Chuaungo (2022) conducted a study on "Students' Thinking Skills, Social Skills and Emotional Skills at the Tertiary Level of Education". The study's objective was to evaluate the thinking, social, and emotional abilities of tertiary-level students in Mizoram. To accomplish this, the researchers employed a Life Skills Inventory that they had created. They gathered data from a sample of 523 college students, which included 230 males and 293 females. The sampling approach utilized was stratified random sampling. The findings of the study revealed that male students exhibited superior thinking skills compared to their female counterparts. Additionally, it was observed that science students outperformed commerce and arts students in thinking skills. Furthermore, the research indicated that males demonstrated higher levels of emotional skills compared to female students. This study provides valuable insights into the gender and academic discipline-related variations in thinking and emotional skills among tertiary-level students in Mizoram.

Rajkumari et al. (2022) conducted a research titled "A Study of Life Skills of Secondary School Students in Relation to their Psychological Well-Being". The study involved the collection of data from 100 students through random sampling, encompassing both private and government schools in the Haryana district of Sonipat, India. The researchers utilized a life skills assessment tool developed by Nair A.R. and R. Subasree in 2014, along with a psychological well-being scale created by Sudha

Bhogale and Indira Jai Prakash in 1995. The findings of the study indicated that there was no significant gender-based effect on psychological well-being and life skills among secondary school students, and no substantial relationship was observed between psychological well-being and life skills.

Anisha et al. (2023) did a research on “A Study of the Life Skills of Students of Institute of Higher Learning in Relation to Self-Concept”. The study sample encompassed 100 students, representing both Science and Art disciplines, drawn from the Institute of Higher Learning at BPSMV University, Sonipat. To investigate this relationship, the researchers employed the life skill questionnaire developed by Nair R. K. Subasree R. and Ranjan Sunitha in 2010, alongside the self-concept rating scale by R. K. Saraswat from the same year. The study's findings unveiled a strong positive correlation between self-concept and life skills among the students enrolled at the Institute of Higher Learning of Bhagat Phool Singh Mahila Vishvidyalya in Khanpur Kalan, Sonipat. This outcome underscores the significance of self-concept in shaping and fostering life skills, indicating that a positive self-concept may contribute to the development and enhancement of life skills in college students, a valuable insight for educators and institutions aiming to support students' personal and academic growth.

2.1.2 Studies on cognitive abilities conducted in India

Chatterji (1983) conducted a research on "A Comparative Study of Personality, Intelligence, and Achievement Motivation Among Students in Various Academic Groups". The research findings revealed that students from Patna University pursuing science-related subjects exhibited significantly higher scores in both verbal factor and total intelligence compared to students in other academic disciplines. Commerce students were found to rank second in terms of intelligence, followed by the agriculture group, which ranked third. In contrast, students in the arts academic group demonstrated the lowest levels of intelligence.

In a study conducted by Malsawmi (1997), titled "The Gifted and Creative College Students in Mizoram in Relation to Their Personality and Problem-Solving Ability". The study involved testing 600 college students from Mizoram. The following findings were reported:

1. No significant disparities in intelligence were observed between male and

female college students.

2. Science majors demonstrated notably higher intelligence levels compared to their counterparts in commerce.
3. Science students also demonstrated significantly higher intelligence compared to students in the arts academic group.
4. Commerce students were found to have significantly higher intelligence levels than their counterparts in the arts academic group.

Chaudhari et al. (2004) conducted a research study on "Pune Low Birth Weight Study - Cognitive Abilities and Educational Performance at Twelve Years." The study investigated the cognitive and academic performance of 12-year-old children who had a birth weight below 2000 grams. It employed a prospective cohort methodology, concentrating on infants who were discharged from a Neonatal Special Care Unit during the years 1987 to 1989. Assessment tools included Weschler's Intelligence Scale, Bender Gestalt test, Wide Range Achievement Test, Draw-a-Person screening test, and Movement Assessment Battery. The study found that these children had lower average IQ scores compared to controls, with preterm Small for Gestational Age (SGA) children having the lowest IQ. Additionally, the study group exhibited poor visuo-motor perception, motor competence, and learning disabilities in writing and mathematics, especially among preterm SGA and Very Low Birth Weight (VLBW) children. Academic achievement was subpar, and the incidence of borderline intelligence had increased compared to earlier assessments at age 6. Overall, children with birth weights less than 2000 grams demonstrated lower cognitive abilities and academic performance, with the most significant challenges observed in preterm SGA and VLBW children.

In the study Chandra (2007) titled "Effect of concept mapping on Science achievement of secondary school students as moderated by cognitive ability, problem solving, and scientific aptitude", the research aimed to explore the impact of concept mapping on the science achievement of secondary school students while considering the moderating factors of cognitive ability, problem-solving skills, and scientific aptitude. The findings indicated that students from both the control and experimental groups in urban secondary schools exhibited comparable pre-test scores in concept mapping during the third trimester. This suggests that the intervention of concept

mapping did not lead to significant differences in pre-test performance between the two groups, highlighting the need for further investigation into the effectiveness of concept mapping as an instructional tool in the context of science education for secondary school students.

Chaya et al. (2012) conducted a study on "Effect of Yoga on Cognitive Abilities in School children from a Socioeconomically Disadvantaged Background: A Randomized Controlled Study". The study's objective was to evaluate how yoga and physical activity affected the cognitive abilities of 7-9-year-old students from an economically disadvantaged background in Bangalore, India. They randomly assigned 200 school children to either a yoga group or a physical activity group. Cognitive functions were assessed at three points: before the intervention, after 3 months of participation, and during a follow-up 3 months later, using a modified Wechsler Intelligence Scale for Children. The study found no significant cognitive performance differences between the two groups post-intervention, with both showing improvements in cognitive test scores. Yoga was shown to be as effective as physical activity in enhancing cognitive abilities in this population.

In Puar's (2012) study titled "A Study of Locale-Wise Differences in Certain Cognitive and Non-Cognitive Variables", the research aimed to explore disparities among high school students based on both cognitive and non-cognitive factors. The study examined cognitive factors such as general mental ability and academic performance, as well as non-cognitive factors like anxiety, emotional maturity, and social maturity. It conducted research with a sample of 400 high school students, comprising 200 boys and 200 girls in the Xth class, selected from eight different schools. The schools were evenly distributed between urban and rural areas and were affiliated with CBSE, New Delhi. To assess the cognitive and non-cognitive aspects of the students, the study employed various evaluation tools, including Dr. Ahuja's group intelligence test, Sharma's anxiety scale for children, Singh & Bhargava's emotional maturity scale, and Dr. Nalini Rao's social maturity scale. Additionally, the study considered aggregate scores in the C.B.S.E. board examination as an indicator of academic achievement. The findings of the study indicated significant differences in general mental ability and anxiety levels between rural and urban high school students, while no substantial disparities were observed in emotional maturity, social

maturity, and academic achievement across these locales.

Dhammi and Choubey (2014) conducted a study titled "A study of emotional intelligence as a correlate of General Intelligence and style of learning and thinking". The research aimed to investigate the relationship between Emotional Intelligence (EI) and General Intelligence (GI) among B.Ed. students in Dhanbad District, Jharkhand. The study involved a sample of 400 students, comprising 200 boys and 200 girls from four different B.Ed. colleges in the region. The key findings of the study were:

1. When considering General Intelligence, there was no significant difference between graduate and postgraduate students in the Science and Humanities groups.

2. However, differences in General Intelligence were found between boys and girls, with boys generally exhibiting higher GI scores.

3. Emotional Intelligence varied among students with different levels of General Intelligence. Students with average GI demonstrated higher EI compared to those with high and low GI.

In Renjith's (2014) study titled "Cognitive Style of Prospective Teachers in Malappuram District," the research focused on prospective teachers in the Malappuram district. The sampling technique employed was stratified random sampling. The data collection instrument used in the study was the Cognitive Style Inventory (CSI), which was developed and standardized by Praveen Kumar Jha in 2001. The findings of the study revealed that 20% of the prospective teachers exhibited a better cognitive style, 65% fell within the medium range, and 15% had a low cognitive style. Notably, the research identified significant differences between social science and English teachers in terms of undifferentiated and systematic cognitive styles. Additionally, prospective teachers with undergraduate (UG) and postgraduate (PG) qualifications exhibited differences in integrated and split cognitive styles.

Mesalina and Natesan (2015) conducted a study titled "Intelligence and Vocational Interest of UG Students in Arts and Science College, Madurai". The main goal of the study was to explore potential variations and associations between the intelligence levels and vocational interests of undergraduate students at Arts and Science College in Madurai. The study involved a sample of 200 students from the mentioned college and employed a simple random sampling technique for data collection. The research tools were designed and standardized by the investigators

themselves. The study's results revealed a strong link between intelligence and vocational interests, especially in areas like art, teaching, commerce, and computer-related fields. Additionally, intelligence showed notable connections with vocational interests in agriculture, science, literature, social executive roles, and clerical positions. It's worth noting that the research indicated that science students performed better than arts students in various intelligence-related dimensions. However, there were no significant differences in vocational interests between the two groups, except in the domains of science and literature.

Yesikar et al. (2015) conducted a study titled "Intelligence Quotient Analysis and Its Association with Academic Performance of Medical Students." The main aim of the research was to explore the connection between the time spent on preparation, self-study hours, academic achievements, and the intelligence quotient (IQ) levels of medical students in the region of Madhya Pradesh. The research aimed to provide insights into how to reduce the time required to complete a Bachelor of Medicine, Bachelor of Surgery (MBBS) degree. The study employed a cross-sectional approach involving 300 medical students who completed a structured questionnaire derived from IQ test.com. The study's results indicated that a large proportion of medical students possessed intelligence levels close to the average (88.3%) and had committed one to two years to prepare for medical entrance exams, devoting significant time (more than 6 hours) to their academic endeavours. Notably, an intriguing observation was that 10% of the students exhibited elevated IQ levels, despite allocating less time to self-study, demonstrating a strong commitment to attending classes. The conclusion drawn from the study was that students with near-average IQ levels performed equally well academically as those with higher IQ levels. Hence, the research proposed that utilizing IQ alone should not be the exclusive basis for medical entrance selection. Instead, it recommended considering secondary school performance and imposing restrictions on the number of attempts to potentially streamline the process of gaining entry to and completing the MBBS degree.

Azam et al. (2016) did a study on "Impact of private secondary schooling on cognitive skills: evidence from India". The study examined how attending private secondary schools impacted students' educational achievements, with a specific emphasis on their performance in a standardized math assessment conducted in the

Indian states of Orissa and Rajasthan. To ensure the accuracy of their findings, the research utilized propensity score matching (PSM) as a method to account for potential systematic variations between students attending private and public secondary schools. Additionally, the study assessed the reliability of the results by considering unobservable factors through the application of the Rosenbaum bounds technique. The results indicated that students in private schools in rural and urban Rajasthan achieved significantly higher scores, around 1.3 and 0.4 standard deviations higher, respectively, compared to their counterparts in public schools. Importantly, this positive impact of private schooling in Rajasthan remained significant even when considering a substantial level of positive selection bias based on unobservable factors. However, in urban Orissa, no statistically significant difference was observed, while in rural Orissa, there was a positive impact of 0.3 standard deviations, although it was susceptible to a minor level of positive selection bias on un-observables.

In the research article titled "Intelligence in relation to height and weight among secondary school students" by Karmakar et al. (2016), the authors aim to investigate the correlation between intelligence, as measured by the Cattell Culture Fair Test of Intelligence, and the variables of height, weight, and BMI among secondary school students residing in both rural and urban areas. The research involves a sample of 97 female and 112 male students randomly selected from five secondary schools in Purulia district, West Bengal, India. The findings of the study indicate a significant relationship between IQ and height, a relatively weaker significant relationship between IQ and weight, and no significant relationship between IQ and BMI.

Malsawmi and Lalchuangkima (2016) did a study on "Intelligence and Music Aptitude of College Students in Aizawl". The study's objective was to evaluate the intelligence and music aptitude of college students in Aizawl, the capital city of Mizoram, India. It also aimed to investigate how these characteristics differ based on gender and academic discipline. Additionally, the research sought to explore any potential connections between intelligence and music aptitude among these college students. The findings of the research indicated that the majority of college students exhibited average levels of both intelligence and music aptitude. Additionally, the study revealed that science students demonstrated higher levels of intelligence compared to students in arts and theology programs, while commerce students

exhibited a higher intellectual level than theology students. Importantly, the study established significant positive correlations between intelligence and music aptitude among college students.

Mittal (2017) conducted a research on "A Study of General Intelligence Among Degree College Students". The study aimed to assess the general intelligence levels of degree college students while examining differences based on various factors. The research involved collecting data from a sample of 625 students from different degree colleges in Punjab. The study employed the "Test of General Intelligence for College Students" by Misra and Pal to measure general intelligence. The study employed T-tests for data analysis, yielding the following findings: (a) Significantly higher general intelligence scores were observed among government college students compared to their private college counterparts. (b) Notably, urban college students displayed greater general intelligence scores than their rural counterparts. (c) Science students exhibited superior general intelligence levels when compared to arts students. (d) Interestingly, there was no statistically significant difference in general intelligence scores between male and female students. This study provides valuable insights into the factors affecting the general intelligence of degree college students, highlighting variations based on college management, locality, field of study, and gender.

Arora (2018) did a study on "A Study of Multiple Intelligence Among Degree College Teachers in Relation to their Gender and Locale" which aimed to assess the multiple intelligence levels of degree college teachers and explore potential variations based on gender and locale. The research involved 150 degree college teachers from rural and urban areas of Sri Muktsar Sahib District in Punjab. The findings suggest that, except for some core intelligences, gender and locale do not significantly impact the intelligence profiles of these teachers.

Nithya (2018) conducted a study titled "A Study on the Relationship between Cognitive Ability and Academic Achievement of Eighth Standard Pupils," examining the association between cognitive ability and academic performance in eighth-grade students. The research, involving 600 students in Coimbatore City, utilized a survey method and adapted a Cognitive Ability Test Battery. Results revealed significant influences of gender, locality, and medium of instruction on verbal, quantitative, and non-verbal reasoning abilities. Additionally, a significant correlation was observed

between these cognitive dimensions and academic achievement. Quantitative ability was found to be higher than verbal and non-verbal abilities for both genders. Students in English-medium schools displayed greater verbal, numerical, and reasoning abilities compared to those in Tamil-medium schools. Urban areas showed higher non-verbal ability, followed by quantitative and verbal abilities, compared to rural areas.

Marwaha et al. (2019) study, titled "Analysis of Educational Intervention on Cognitive Abilities and Academic Achievement of 7-year-old Students in Punjab and Chandigarh," investigated the impact of an intervention program rooted in Gardner's multiple intelligences on cognitive abilities and academic achievement among students in Punjab and Chandigarh. The study categorized respondents into experimental and control groups, providing customized worksheets based on their learning styles. The results demonstrated a notable enhancement in cognitive abilities and academic achievement within the experimental group, while the control group showed insignificant changes.

Mounika et al. (2019) conducted a study on "Cognitive Abilities of Urban and Semi-Urban Pre-School Children of Dharwad, Karnataka, India". The study aimed to assess the demographic profile and cognitive abilities of pre-school children in both urban and semi-urban areas of Dharwad District, Karnataka, India. The study was conducted at the Department of Food Science and Nutrition, College of Community Science, University of Agricultural Science in Dharwad, Karnataka, India, during the period from July 2017 to July 2018. The research involved the random selection of a sample of 100 preschool children, aged between 3 and 6 years. This sample was diverse, including children from various age groups. To assess the cognitive abilities of these children, the researchers employed the Kaufman Assessment Battery for Children, second edition (KABC-II), which is a clinical tool designed for evaluating processing and cognitive skills in children. The research’s results indicated that urban pre-school children exhibited higher cognitive abilities compared to their semi-urban counterparts across various cognitive subsets, cognitive processes, and cognitive indices.

The study by Tsimpli et al. (2020) titled "Linguistic Diversity, Multilingualism, and Cognitive Skills: A Study of Disadvantaged Children in India," aimed to explore the impact of multilingualism and sociolinguistic diversity on the cognitive skills of

socioeconomically disadvantaged primary school children in Delhi and Hyderabad. They employed cognitive tasks, including the n-back and Raven's Colored Progressive Matrices, along with a questionnaire to assess sociolinguistic diversity. The study found that bilingual children exhibited better cognitive performance compared to monolinguals, highlighting the positive relationship between multilingualism and cognitive abilities. Furthermore, a socially and linguistically diverse environment seemed to enhance cognitive skills, even for non-multilingual children. The study emphasized the influence of contextual factors, such as city of residence, on cognitive performance, underscoring the need to consider these factors when assessing cognitive abilities.

Iqbal et al. (2021) did a research study titled "Relationship between IQ and academic performance of medical students". The study, conducted at Ameer Ud Din Medical College / PGMI Lahore, involved 100 second-year MBBS students, including 46 males and 54 females. IQ was assessed using the Modified Wechsler Adult Intelligence Scale (WAIS), while academic achievements were evaluated using students' previous academic records and test marks during the second year of MBBS. The findings revealed a statistically significant difference in IQ between males and females, with males exhibiting higher mean IQ scores. Moreover, the study determined that IQ did not exhibit a significant correlation with academic performance.

Kaur and Gupta (2021) conducted a study on "Study of Relationship between Adjustment and Intelligence among Adolescents". The research involved 300 secondary school students in the Barnala district of Punjab. The findings highlighted that well-adjusted students in secondary school tended to excel in their academic subjects. Notably, there was a significant difference in adjustment levels based on gender, although no such difference was found in intelligence. Furthermore, the study revealed a positive and significant relationship between adjustment and intelligence among adolescents.

In the paper titled "Gender gaps in cognitive and noncognitive skills among adolescents in India" by Hervé et al. (2022), the authors utilize a unique dataset comprising over 20,000 adolescents in rural India to investigate gender disparities in both cognitive and noncognitive skills. Their findings consistently reveal that boys possess significant advantages over girls across various indicators of these skills, a

pattern that remains robust even when accounting for various controls and specification choices. Additionally, the study explores the factors associated with cognitive and noncognitive outcomes, with a particular focus on socioeconomic status (SES) and pro-female gender attitudes. The study reveals a significant positive connection between socioeconomic status (SES) and supportive attitudes towards gender equality, particularly regarding skills. Additionally, it highlights that individuals with higher SES and more favorable attitudes towards gender equality play a pivotal role in narrowing the gender gap in both cognitive and noncognitive achievements.

Kaur and Prajapati (2022) conducted a study titled "Academic Achievement in relation to Cognitive Ability among Secondary School Students". 320 adolescents were selected from secondary schools in the Amritsar district, considering factors such as gender, locale, and school type. This research falls within the domain of descriptive research and employed a stratified random sampling technique to investigate the connection between academic achievement and cognitive ability among secondary school students. Cognitive ability was assessed using Jha's Cognitive Style Inventory (2001), while academic achievement was measured based on scores from the students' previous class. The study revealed statistically significant mean differences in academic achievement scores among secondary school students with different cognitive abilities. Notably, students with an integrated cognitive style had higher mean scores, followed by those with systematic, split, undifferentiated, and intuitive styles. The findings suggest that teachers should pay attention to students with lower academic achievement and employ various teaching materials and methods tailored to students' cognitive abilities. This approach is likely to contribute to the academic success of students. Additionally, the study underscores the positive association between academic success and cognitive ability, emphasizing the importance of offering opportunities for students to enhance their cognitive abilities through reasoning classes and quiz competitions.

Prabha and Dhanalakshmi (2022) conducted a study titled "A Study on Cognitive Ability and Academic Achievement among Higher Secondary School Students," with the objective of investigating the relationship between cognitive ability and academic performance among higher secondary school students in Salem district,

Tamil Nadu. The research employed a simple random sampling method to select 250 students from diverse school types (government, government-aided, and private). Data collection involved the utilization of a cognitive ability tool, and the analysis included 't' tests and correlation methods. The study's results demonstrated a significant correlation between cognitive ability and the academic achievements of higher secondary school students.

2.2.0 Studies done abroad:

Studies done abroad were further sub-divided into two categories:

1. Studies on life skills done abroad
2. Studies on cognitive abilities done abroad

2.2.1 Studies on life skills done abroad

Chen et al. (1998) did a study titled "A longitudinal study of self-awareness and depressed mood in adolescence". The research explored the relationship between longitudinal fluctuations in self-awareness and depressed mood among a sample of 479 adolescents in New Jersey, USA over a seven-year period through four waves of data collection. The study found a significant association between self-awareness and depressed mood, with this association being particularly pronounced during mid-adolescence. Furthermore, the results of regression analyses indicated a bidirectional influence between self-awareness and depressed mood over time. Stressful life events, including pubescent changes and relationships with significant others, were identified as factors contributing to variations in self-awareness. Notably, the impact of these life events varied across different stages of adolescence. This research sheds light on the intricate interplay between self-awareness, depressed mood, and the influence of external stressors during the critical developmental period of adolescence.

Botvin et al.'s (2003) study, "Preventing tobacco and alcohol use among elementary school students through life skills training" assessed the effectiveness of a substance abuse prevention program for elementary school students in grades 3 through 6. The program focused on teaching social resistance skills and personal and social competence skills. The outcomes revealed that students who underwent the intervention reported a decrease in smoking, a stronger stance against drinking,

improved knowledge about substance use, reduced expectations of smoking and alcohol use being normal, and higher levels of self-esteem compared to students who did not receive the intervention, all at the individual level. At the school level, there were significantly lower annual prevalence rates of smoking (61% lower) and alcohol use (25% lower) in schools that received the prevention program. This study demonstrated the effectiveness of a school-based substance abuse prevention approach for elementary school students.

Bastian et al. (2005) conducted a research study on "Emotional intelligence predicts life skills, but not as well as personality and cognitive abilities". The study conducted in Adelaide, Australia, with a focus on 246 first-year tertiary students, sought to investigate the connections between Emotional Intelligence (EI) and a range of 'life skills,' encompassing aspects like academic performance, life contentment, anxiety levels, proficiency in problem-solving, and capabilities in dealing with stress. The findings of the study indicated that there were minimal and not statistically significant links between EI and academic achievement. Conversely, elevated levels of Emotional Intelligence were correlated with heightened life satisfaction, enhanced perceptions of problem-solving proficiency, improved coping skills, and decreased levels of anxiety. Nevertheless, even though emotional intelligence exhibited some connection with these life skills, the shared variance between EI and life skills was found to be limited, accounting for 6% or less of the variation in life skills. This suggests that while EI could predict certain aspects of life skills, its predictive power was not as strong as personality traits and cognitive abilities.

Seal's research conducted in 2006, titled "Preventing tobacco and drug use among Thai high school students through life skills training," aimed to assess the effectiveness of a school-based health intervention program that utilized life skills training (LST) to reduce tobacco and drug use among high school students in Thailand. The study employed a randomized pretest and post-test comparative design involving a sample of 170 Thai students in grades 7–12. The findings of the study demonstrated that the LST program had a notable positive impact. It resulted in improved knowledge, more favorable attitudes, and the development of important skills such as refusal, decision-making, and problem-solving. Importantly, these positive outcomes substantiated the program's effectiveness in the prevention of tobacco and drug use

among Thai high school students.

Sobhi-Gharamaleki and Rajabi (2010) did a research study on "Efficacy of life skills training on the increase of mental health and self-esteem of the students". They conducted an experimental research approach with a before-after test design and a control group was employed. The study focused on all male students admitted to the University of Mohaghegh Ardabili, Iran, specifically targeting those who exhibited symptoms of mental disorders, as assessed by scores of 28 or higher on the DASS questionnaire (which assesses anxiety, depression, and stress) (n = 210). A group of 40 male students was randomly selected and split into two equal groups: a control group of 20 students and an experimental group of 20 students. During a four-week period, the experimental group underwent eight sessions of life skills training, while the control group did not receive any treatment or intervention during this time. After excluding three individuals from the experimental group, the data from 37 participants were analyzed. The results indicated that life skills training had a significant positive effect on reducing symptoms of mental disorders, particularly anxiety, depression, and stress, among students initially suspected of experiencing mental health issues.

Maryam et al. (2011) conducted a study titled "Effectiveness of life skills training on increasing self-esteem of high school students". The study employed a pseudo-experimental design and included 160 students in Karaj city, Iran. Participants were randomly selected from various schools in Karaj and divided into two groups: a study group that received life skills training from trained counselors and a control group comprising 80 students. After participating in the training program, all participants were asked to fill out the 58-item version of the Cooper Smith self-esteem questionnaire. The results of the study showed a notable improvement in self-esteem among the students who underwent life skills training when compared to the control group. As a result of this research, it was concluded that psychoeducational and mental health programs like life skills training can be effective in improving fundamental skills in students and addressing challenges related to school and education.

Williamson (2011) did a study on "The creative problem-solving skills of arts and science students - The two cultures debate revisited". The research included 116 participants from a post-1992 university, with an even distribution between students majoring in arts and science. The study's objective was to assess convergent thinking,

divergent thinking, favored learning styles, and the ability to creatively solve problems. This assessment was carried out by introducing novel and vaguely defined challenges within the domains of management and public policy. Subsequently, direct interviews were conducted with a selected sample to gain deeper insights into their contemporary educational experiences. The study's results were unexpected as they contradicted previous research. It was found that there were no significant disparities in problem-solving abilities between arts and science students. Nevertheless, variances were noticed in their favoured learning methods, albeit these distinctions were notably less pronounced than what had been previously documented. This investigation proposed that contemporary graduates tend to possess a more well-rounded educational background compared to those in specialized fields in the past, providing insights into the potential factors driving this transformation.

Amirian (2012) conducted a study on "Effect of life skills education on academic achievement of first year high school male students". The research aimed to assess the impact of training in problem-solving abilities, self-awareness capabilities, and stress management skills, both separately and when combined, on the academic achievement of male students in their first year of high school. The study included the entire population of first-year high school male students of Kermansha, Iran and employed a simple random sampling method. The research design was practical, employing a post-test type with a control group consisting of multiple groups. The research tools utilized in this study included a life skills education package, teacher-made assessments, and academic achievement tests. These tools were applied to the control group in a conventional manner. The study randomly selected 105 first-grade secondary school students, distributing them into four experimental groups and one control group. The dependent variable, academic achievement level, was assessed at the conclusion of the study. Data analysis involved the use of one-way analysis of variance and the Turkey pursuit test. The findings indicate that teaching problem-solving, self-awareness, and coping with stress skills, both separately and in combination, has a discernible impact on students' academic performance. Furthermore, significant differences were observed in the effectiveness of the experimental groups.

The study conducted by Lolaty et al. (2012) aimed to investigate the impact of

life skills training on the emotional intelligence of first-year students at Mazandaran University of Medical Sciences in Iran. The study employed an experimental approach, randomly dividing participants into two groups: a case group consisting of 20 individuals and a control group with 19 individuals. These groups were carefully matched based on several factors such as gender, recent encounters with stressful life events, interest in their chosen field of study, and their initial emotional intelligence levels. Both groups underwent assessments using the Bar-on Emotional Quotient Inventory before and after completing life skills training. The findings indicated a noteworthy enhancement in emotional intelligence scores among the case group, which received the life skills training, whereas the control group exhibited no significant alterations in their emotional intelligence levels.

Mofrad (2013) conducted a research titled "Life Skills Development among Freshmen Students". The primary aim was to examine life skills among undergraduate students. The research comprised 500 individuals between the ages of 18 and 25, selected from five universities in Subang Jaya, Malaysia. To evaluate life skills, the investigators employed the Life-skills Development Inventory-College Form, which encompassed four key areas: interpersonal communication, decision-making, health management, and identity development. Notably, the study's results revealed notable disparities between genders, especially concerning health management. Furthermore, the research recommended that educators create opportunities for students to enhance their social skills, thereby better equipping them to confront real-life challenges.

The study conducted by Ndirangu and colleagues in 2013, titled "Gender Factors in Implementing Life Skills Education in Secondary Schools in Nairobi, Kenya," focused on examining the difficulties related to gender in the execution of Life Skills Education in secondary schools within the Nairobi East District of Kenya. To address this issue, the research utilized a descriptive research design that combined both quantitative and qualitative data collection techniques. The study drew inspiration from Bandura's social learning theory and Pearson's Theory on gender relations to better understand the factors affecting the implementation of life skills education in the specified context. The findings highlighted gender-related obstacles in selecting teachers for life skills education, with a predominance of female teachers. Teachers expressed discomfort in addressing sensitive topics with students of the opposite sex,

and there were concerns regarding syllabus coverage. Additionally, a significant number of female students preferred sharing their concerns with female peers, indicating gender-specific barriers in the teaching of life skills in schools.

Behroz-Sarcheshmeh et al. (2017) did a research study on "Effect of training of life skills on social skills of high school students with intellectual disabilities". The study employed an experimental design with a pre-test and post-test, including both an experimental group (n=20) that received nine sessions of life skills training and a control group. The Social Skills Rating Scale (Teacher Form) was used for pre-test and post-test assessments, and data analysis was conducted using multivariate analysis of covariance (MANCOVA) with SPSS software. The study's findings showed that the experimental group experienced notable enhancements in overall social skills and specific aspects such as cooperation, assertiveness, and self-control. In contrast, the control group did not exhibit significant changes. These findings underscore the importance of educators and parents reinforcing the acquisition of social skills through direct and indirect life skills training methods, highlighting the effectiveness of such training in enhancing the social skills of high school students with intellectual disabilities.

Nold (2017) conducted a study on "Using Critical Thinking Teaching Methods to Increase Student Success: An Action Research Project". The study was conducted in the United States of America and engaged in an action research project where the curriculum of three business courses was adjusted to incorporate activities supported by research for fostering critical thinking. The research employed the Motivated Strategies for Learning Questionnaire (MSLQ) to evaluate changes in 15 learning constructs during the course, correlating them with students' grades. Additionally, a modified version of the Motivated Strategies for Learning Questionnaire (MSLQ) was given to students at the start and end of eight-week courses to assess their self-evaluation of factors contributing to their success. The outcomes derived from classes held between 2013 and 2014 over a 15-month period indicated significant enhancements in 14 out of 15 success-related components. Notably, there was a significant improvement in intrinsic goal orientation, self-efficacy, and critical thinking skills.

Ocak and Kutlu-Kalender (2017) conducted a research on "Investigation of 6th-

grade students' critical thinking skills in terms of various variables (Kütahya sample)". The primary objective was to examine the levels of critical thinking among 6th-grade students and how they differ based on several independent variables. These variables encompassed gender, elective course participation, the educational levels of the students' mothers and fathers, and the extent of following scientific journals. The research employed a survey model and involved a sample of 666 6th-grade students in Kütahya, Turkey. Data collection utilized "The Cornell Conditional Reasoning Test, Form X" and a "Personal Information Form." The results indicated that students' critical thinking skills exhibited variations concerning gender and elective courses, specifically in the context of science applications. Additionally, parental education status emerged as a significant factor, influencing students' critical thinking abilities. However, the variables related to general education and the habit of following scientific journals did not demonstrate a substantial impact on students' critical thinking levels.

Fida et al. (2018) conducted a research titled "Gender Comparison of Emotional Intelligence of University Students". The research aimed to explore the emotional intelligence of university students, with a particular focus on gender differences. The study involved students from all five faculties of a university in Khyber Pukhtunkhwa, a province in Pakistan. To assess emotional intelligence, the researchers utilized a scale developed by Wong and Law (2002) called Wong and Law Emotional Intelligence Scale (WLEIS). The results of the investigation revealed that female students demonstrated a higher level of emotional intelligence compared to their male counterparts. Additionally, the study found variations in emotional intelligence across different faculties, with students in the fields of business and economics exhibiting superior emotional intelligence levels, while those in the Arts and Humanities faculties demonstrated lower levels.

Nair and Fahimirad (2019) did a study on "A Qualitative Research Study on the Importance of Life Skills on Undergraduate Students' Personal and Social Competencies". The primary goal of this research was to investigate the connection between a life skills program and the personal efficacy and competencies of students. This study involved a sample of eight students and focused on their self-perceived effectiveness after participating in the life skills program. Employing a qualitative

research methodology, the research utilized in-depth interviews and self-assessment related to the life skills module. The participants were randomly selected from freshman undergraduate students who had successfully completed the life skills modules at Taylor's University in Malaysia. The study aimed to discern the students' perceptions and abilities following their engagement with life skills modules, highlighting the significance of life skills as a technical requirement for both acquiring hard skills and enhancing future employability prospects. The thematic analysis of the results highlighted the significant role of embedding life skills programs within the university curriculum in shaping students' personal and social competencies. This finding underscored the importance of integrating life skills into the curriculum, offering potential benefits for students' professional and interpersonal skills, including teamwork, communication, leadership, time management, decision-making, and problem-solving.

In the study conducted by Arif et al. (2020), titled "Assessment of Life Skills Among College Undergraduate-Students; Implication for Enhancing Students Academics and Personality Development," the primary objective was to assess the extent of life skills among undergraduate students in Khyber Pakhtunkhwa, Pakistan. Additionally, the research examined variations in life skills based on individual and demographic characteristics. The study involved a sample of 794 college students, which represented 5% of the total population (15,890). The researchers utilized the Life Skills Assessment Scale (LSAS), developed by N.R. Prakash and S. Nirmala Devi in 2014, to collect the necessary data. The study's findings revealed that the overall nature of life skills among college students was moderate. Significantly, female undergraduate students exhibited a lower level of life skills when compared to their male counterparts ($p < .05$). However, there were no significant differences in life skills concerning locality and scheme of studies ($p > .05$). This research underscored the need to enhance teaching-learning processes and promote personality development among college learners, especially in the context of life skills.

Ewies et al. (2021) did a study on "The Availability of Problem-Solving Skills among Gifted Students in Schools of Excellence and Its Relation with Their Parents' Academic Level". The research aimed to address the gap in knowledge concerning the evaluation of problem-solving skills in gifted students attending King Abdullah II

Schools for Excellence in Jordan. Additionally, it aimed to investigate whether the academic levels of parents had any impact on the problem-solving capabilities of these gifted students. To achieve their objectives, the researchers employed a descriptive and analytical research methodology. The study involved a research population of 206 participants, and a research sample of 80 respondents was selected using stratified random sampling. The Heppner assessment was utilized to evaluate problem-solving skills, with rigorous validation and reliability checks. The study's findings revealed that 66% of gifted students demonstrated problem-solving skills below an acceptable level, while 34% exhibited skills within the acceptable range. Importantly, the research found no statistically significant differences in problem-solving abilities related to the academic levels of the gifted students' fathers and mothers.

Graves et al. (2021) did a study on "Gender differences in perceived stress and coping among college students". The research focused on examining stress levels, coping strategies, and gender differences among undergraduate students as they neared the end of the academic semester. The research involved a cohort of 448 university students who were enrolled in three separate undergraduate exercise science courses located in Florida, United States. Data collection took place during the twelfth week of the semester, approximately four weeks before final exams. Two assessment tools, the Perceived Stress Scale and Brief Cope, were employed to evaluate stress levels and coping strategies among the participants. The research outcomes revealed that, in general, female students expressed greater stress levels in comparison to their male peers. Additionally, the study identified gender differences not only in how individuals cope with stress but also in the specific coping methods they employ. Female students demonstrated a preference for emotion-focused coping strategies and were more likely to frequently adopt four particular coping techniques compared to males. These strategies encompassed self-distraction, seeking emotional support, seeking instrumental support, and venting as means to deal with stress.

Sánchez-Hernando et al. (2021) conducted a study titled "Association between Life Skills and Academic Performance in Adolescents in the Autonomous Community of Aragon (Spain)". The study's objective was to investigate the relationship between life skills and academic achievement in a significant sample of adolescents who lived in the autonomous region of Aragón, Spain. This research, conducted during the 2018-

2019 academic year, specifically targeted middle school students in the 7th and 8th grades. The study involved the random selection of 43 middle schools, ultimately encompassing 1,745 students. Data collection involved the use of a validated questionnaire covering various aspects, including sociodemographic variables, social skills, self-efficacy, affective balance, and academic performance. The findings of the study revealed a statistically significant association between life skills and academic performance within the sample, highlighting the importance of life skills in educational outcomes. Additionally, significant distinctions based on gender were evident, as boys displayed superior performance in cognitive abilities and emotional equilibrium, whereas girls showcased higher proficiency in social aptitudes. This research underscored the value of life skills in shaping academic achievement and sheds light on gender-specific patterns in these skills among adolescents.

Shek et al. (2021) did a study on "Perceptions of adolescents, teachers and parents of life skills education and life skills in high school students in Hong Kong". The researchers conducted four comprehensive studies to investigate the perceptions of various stakeholders regarding the necessity and sufficiency of life skills education for adolescents in Hong Kong. These studies included both a longitudinal examination involving senior high school students (N = 3328+) and three separate cross-sectional studies involving students (N = 2474), teachers (N = 568), and parents (N = 431). Participants shared their perspectives on the importance of incorporating life skills education into the formal curriculum and its adequacy. Across all four studies, it became evident that many stakeholders acknowledged the significance of life skills for adolescents. However, a significant majority of them expressed concerns about the existing life skills education within the school curriculum, deeming it insufficient. Furthermore, there were indications that the development of life skills among adolescents was still a work in progress. Notably, in comparison to teachers and parents, adolescents themselves perceived higher levels of life skills among their peers in Hong Kong.

Choudhary and Kanwal (2022) conducted a study titled "21st Century Skills of 21st Century Learners: A Comparative Study of Science and Arts Students". The research aimed to evaluate specific 21st-century competencies, including Critical and Logical Thinking Skills, Digital Literacy Skills, and 3Rs Skills. The study

encompassed 151 F.G. secondary schools in Islamabad and involved a sample of 200 students selected using stratified random sampling. To assess the students' perceived levels of these skills, the research employed a survey methodology with rating scales. The results of the study suggested that there was no notable disparity in the overall perceived proficiency of 21st-century skills among secondary school students, regardless of whether they pursued a science or arts academic track. However, it was observed that science group students exhibited a higher level of digital literacy compared to their counterparts in the arts stream. On the other hand, there was no significant difference in the perceived level of critical thinking between the two groups.

Orhan and Tekin (2022) did a study titled "A Study on High School Students' Critical Thinking Skills". The primary objective was to assess the critical thinking (CT) skills of high school students and investigate whether these skills varied based on several factors, including gender, parental educational background, age, and grade level. This quantitative study was conducted in Turkey, employed a survey design and involved 603 high school students as participants. Data collection utilized the Critical Thinking Skill Test for High School Students. The findings revealed that high school students exhibited high CT skills across various sub-tests. Importantly, the study found significant differences in students' CT skills based on gender and the educational background of their parents. Female students and those with parents holding higher educational degrees demonstrated higher CT skills. However, age and grade level did not have a significant impact on students' performance in individual sub-tests or overall CT scores.

Vasli et al. (2023) did a study on "Correlation between critical thinking dispositions and self-esteem in nursing students". The study involved 276 nursing students specifically drawn from two institutions: Babol University of Medical Sciences in Babol, Iran, and Shahid Beheshti University of Medical Sciences in Tehran, Iran through random sampling. To collect data, Ricketts' Critical Thinking Disposition Questionnaire and Eysenck's Self-Esteem Scale were used. The research findings demonstrated a strong and positive association between critical thinking and self-esteem (correlation coefficient $r = 0.529$, $p < 0.001$). Furthermore, the study identified a positive correlation between self-esteem and critical thinking traits such as

commitment, perfectionism, and creativity (correlation coefficient $r = 0.40$, $p < 0.001$). Moreover, the researchers observed that these critical thinking dispositions exhibited a significantly increasing trend across various academic years, although the difference was not significant in the case of perfectionism ($P < 0.001$).

Vergara and Tajomera (2023) did a research study on "Life Skills of Adolescents in a Catholic University in Central Philippines". The researchers employed a quantitative design to assess the life skills of 268 adolescents enrolled in the academic year 2022-2023 using a 100-item standardized questionnaire. The findings indicated that the adolescents' overall level of life skills was rated as average, suggesting that their ability to navigate life challenges could either regress or progress depending on the severity of the situations and the availability of resources. Notably, the lowest-scoring area was coping with stress, while self-awareness was the highest-scoring aspect of life skills. Interestingly, the study found no significant relationships between life skills and factors such as sex, birth order, and family structure. This suggests that there may be other unexplored factors influencing adolescents' life skills, which could be a valuable direction for future research. Consequently, the study underscored the importance of continuous enhancement of life skills among adolescents to enable them to reach their optimal potential and effectively cope with life's challenges and demands.

Winarsunu et al. (2023) did a research titled "Life skills training: Can it increases self-esteem and reduces student anxiety?" The main goal of the study was to examine how self-esteem influences anxiety levels when life skills training is introduced. The research took place at the University of Muhammadiyah Malang in Indonesia and involved 14 students, divided into two groups: the experimental group and the control group. To assess the impact, the researchers used scales to measure self-esteem and anxiety, and the analysis involved non-parametric techniques such as the Mann Whitney, Wilcoxon, and Spearman's Rank Correlation Test. The study's outcomes reveal a notable reduction in anxiety levels among students, accompanied by an increase in self-esteem, as a direct result of participating in life skills training. This underscores the potential effectiveness of life skills training in enhancing self-esteem and diminishing anxiety among students.

2.2.2 Studies on cognitive abilities done abroad

Plant and Richardson (1958) conducted a study titled "The IQ of the average college student". The researchers compared the IQ scores reported for college and university student samples with those obtained for 732 college freshmen at San Jose State College, California, USA. Their analysis suggested that the most accurate estimate of the average IQ value for college students is approximately 120, while for college freshmen specifically, it is around 116. The study provided valuable insights into the IQ levels of college students and freshmen, shedding light on the cognitive abilities of individuals in higher education.

Jorm et al. (2004) did a study on "Gender differences in cognitive abilities: The mediating role of health state and health habits". The study examined gender differences in cognitive performance by conducting various cognitive tests such as the California Verbal Learning Test, Digit Span Backwards, Symbol–Digit Modalities Test, Spot-the-Word, and simple and choice reaction time. The research involved a diverse sample of participants, including 2404 individuals aged 20–24 years, 2530 aged 40–44 years, and 2551 aged 60–64 years. The results revealed that males performed better in tasks like Digit Span Backwards and reaction time, while females demonstrated higher proficiency in recall and the Symbol–Digit Modalities Test. To comprehend these gender differences, the study explored potential mediators such as education, non-English speaking background, depressive symptoms, alcohol usage patterns, physical activity levels, cannabis consumption, and pulmonary function. Notably, the study revealed that when these mediating variables were taken into account, gender differences tended to diminish in tests where males had an advantage, while they intensified in tests where females displayed superiority.

Deary et al. (2007) conducted a research on "Intelligence and Educational Achievement". The study examined the connection between psychometric intelligence assessed at age 11 and academic performance in national exams across 25 different subjects at age 16. The research unveiled a robust positive correlation of 0.81 between an underlying intelligence trait (Spearman's g from CAT2E) and a latent academic achievement trait assessed by GCSE scores. General intelligence played a significant role in determining success in all 25 subjects, with varying levels of impact, ranging from 58.6% in Mathematics to 18.1% in Art and Design. Interestingly, the study found

that although girls did not exhibit an advantage in general intelligence, they outperformed boys in all subjects except Physics, and this advantage was not attributed to their superior verbal skills. Additionally, the study highlighted the importance of obtaining five or more GCSEs at grades A∗–C by age 16, with 61% of girls and 50% of boys achieving this criterion. Notably, a standard deviation increase or decrease in general intelligence significantly influenced these achievement percentages, with values of 91% and 16%, respectively. The research underscored the strong association between intelligence and educational success during adolescence, emphasizing its broad impact across various academic subjects.

Leeson et al. (2008) conducted a study titled "Cognitive ability, personality, and academic performance in adolescence". A longitudinal study involving 639 high school students in Australia was conducted to examine the factors influencing academic performance. The research focused on cognitive capacity and three aspects of positive thinking: self-esteem, hope, and attributional style. The results indicated that hope, a positive attributional style, and cognitive ability were substantial indicators of improved grades, underscoring their favourable influence on academic performance. In contrast, self-esteem was found to be a less consistent predictor of academic performance. Structural equation modeling further demonstrated the importance of cognitive ability, gender, and a second-order positive thinking factor in influencing grades. This study underscored the unique roles played by intelligence, gender, and positive thinking in predicting academic performance among adolescents.

Taub et al. (2008) conducted a study titled "Effects of general and broad cognitive abilities on mathematics achievement," which aimed to explore the direct and indirect impacts of both general intelligence and seven broad cognitive abilities on students' mathematics performance. The research employed structural equation modeling to simultaneously investigate the effects of these cognitive factors on mathematics achievement. The study's findings revealed that several CHC broad cognitive ability factors, specifically Fluid Reasoning, Crystallized Intelligence, and Processing Speed, exhibited significant direct effects on mathematics achievement. In contrast, the general intelligence factor displayed indirect effects on mathematics achievement across various age groups.

Haworth et al. (2009) conducted a research study on "A twin study of the

genetics of high cognitive ability selected from 11,000 twin pairs in six studies from four countries". An extensive investigation into the genetic and environmental factors influencing high general cognitive ability (referred to as 'g'). This research involved a large sample of 11,000 twin pairs, spanning an age range from 6 to 71 years, drawn from various twin studies across Australia, the Netherlands, the United Kingdom, and the United States. The study employed age-appropriate psychometric cognitive tests to assess cognitive abilities, with 'g' scores standardized within each study. Through the application of the liability-threshold model fitting, scientists conducted an analysis to determine genetic and environmental factors for individuals in the upper 15% of the 'g' distribution. The results indicated a significant genetic impact on high 'g,' amounting to 0.50, within a 95% confidence interval ranging from 0.41 to 0.60. Furthermore, the study identified moderate shared environmental influences at 0.28, with a confidence interval of 0.19 to 0.37. This study highlighted the significant contribution of genetic variation to high cognitive ability across multiple countries, shedding light on the heritability of cognitive aptitude in diverse populations.

Leikas et al. (2009) conducted a study titled "Cognitive ability× emotional stability interactions on adjustment," which explored whether the interplay between cognitive ability and emotional stability extends to well-being measures beyond self-reports. The research, involving 152 male conscripts, assessed emotional stability and cognitive ability and derived indicators of adjustment and competence from various sources. The study found that cognitive ability moderated the relationship between emotional stability and both self-reported and non-self-reported indicators of adjustment and competence. Notably, low emotional stability was associated with adverse outcomes only in individuals with low cognitive ability, suggesting that cognitive ability acts as a protective factor, buffering the influence of emotional stability on well-being.

Preckel et al. (2011) conducted a study on "Chronotype, cognitive abilities, and academic achievement: A meta-analytic investigation". The authors conducted four meta-analyses to explore the relationships between chronotype (morningness or eveningness) and various aspects of cognitive abilities and academic achievement. The research involved a substantial sample size, with separate analyses for morningness and eveningness in relation to cognitive ability and academic achievement. The focus

was on assessing the population effect size and homogeneity of the results across multiple studies. The findings consistently revealed significant correlations between chronotype and both cognitive ability and academic achievement. Interestingly, being an evening person was linked to higher cognitive ability but lower academic achievement indicators. Conversely, being a morning person was associated with lower cognitive ability but a positive correlation with academic performance. This study highlights the intricate connections between individuals' chronotype preferences and their cognitive and academic performance, shedding light on the multifaceted nature of these relationships.

Vock et al. (2011) did a study titled "Mental abilities and school achievement: A test of a mediation hypothesis", where the researchers investigated the relationships between four cognitive abilities, namely reasoning, divergent thinking, mental speed, and short-term memory, and their impact on the academic achievement of adolescents in grades seven to 10. The study, which included a significant sample size of 1135 participants, utilized information processing methods to assess intelligence. It conducted tests to examine a mediation hypothesis proposing that advanced cognitive skills like reasoning and divergent thinking act as intermediaries in the impact of fundamental cognitive abilities like mental speed and short-term memory on academic performance. Employing structural equation modeling while accounting for data clustering, the findings of the study supported the idea that mental speed and short-term memory, which represent fundamental cognitive processes, indirectly influence academic achievement by affecting reasoning and divergent thinking. Additionally, short-term memory was found to have a direct impact on academic achievement. This research sheds light on the intricate interplay of cognitive abilities and their roles in shaping students' academic success.

In Kaufman's (2012) study titled "Are cognitive g and academic achievement g one and the same g? An exploration on the Woodcock–Johnson and Kaufman tests," the research delved into the extent of the correlation between the traditional notion of "g" linked to IQ tests and general cognitive ability assessments (COG-g) and the overall ability that forms the basis for evaluations of reading, mathematics, and writing accomplishments (ACH-g). While COG-g and ACH-g were not identical, they displayed a substantial correlation, with an overall mean correlation coefficient of .83,

and this correlation tended to strengthen with age, ranging from .77 to .94.

Phillipson and Phillipson (2012) conducted a study on "Children's cognitive ability and their academic achievement: The mediation effects of parental expectations". The research was conducted with data from 780 students in a primary school in Hong Kong and their parents. The research sought to investigate if parental emotional factors, encompassing parental participation in both home and school, parental confidence in their children's capabilities, and parental aspirations for their children's academic performance, serve as intermediaries in the connection between students' IQ scores and their academic success in subjects such as English, Chinese, and Mathematics. The findings of the study supported the hypothesis that parents play a crucial role in helping their children realize their cognitive abilities by directly communicating their academic expectations to them. In essence, parental expectations and involvement act as mediators between a child's cognitive ability, as measured by IQ scores, and their academic performance in various subjects. This research underscored the significant influence of parental expectations and support on a child's academic success, emphasizing the importance of parental involvement in a child's educational journey.

Proctor (2012) did a research study on "Relationships between Cattell–Horn–Carroll (CHC) cognitive abilities and math achievement within a sample of college students with learning disabilities". The research focused on exploring the connections between cognitive abilities and mathematical achievement among college students with learning disabilities (LD). The research findings, obtained through multiple regression analyses, indicated that Math Calculation scores were correlated with Processing Speed and Working Memory, whereas Math Reasoning scores were associated with Comprehension-Knowledge, Fluid Reasoning, and Working Memory. This investigation sheds light on the intricate relationship between cognitive abilities and math performance in the context of learning disabilities among college students, offering valuable insights for the assessment and support of individuals with math LD in higher education settings.

Rudasill et al. (2013) in their study titled "Gifted students' perceptions of parenting styles: Associations with cognitive ability, sex, race, and age", investigated the relationship between children's cognitive abilities and their perceptions of their

parents' parenting styles. This research focused on a group of intellectually gifted students (N = 332) with ages ranging from 9 to 17 years old, all of whom participated in a summer residential program. The participants completed the Parental Authority Questionnaire and the Cognitive Abilities Test's verbal battery. The study's main findings revealed three key points. Firstly, the factor analyses supported the use of the Parent Authority Questionnaire with gifted populations. Secondly, the findings suggested that highly cognitively capable students were more likely to view their parents as adopting a flexible and authoritative approach to parenting. Furthermore, the study revealed that factors such as age, gender, and ethnicity were linked to parenting styles within this cohort of identified gifted students. These results reinforced the beneficial influence of authoritative parenting, especially in the case of gifted children.

Khaleefa et al. (2014) did a study on "IQ Differences between Arts and Science Students at the University of Khartoum". The researchers aimed to investigate the IQ differences among first-year students at the University of Khartoum Sudan, specifically between arts and science students. The study involved testing 1001 first-year students using the Standard Progressive Matrices (SPM) in 2008. The mean IQ score obtained by these students was 44.2. One significant finding of the study was that there were considerable differences in the IQ scores of students belonging to different departments at the University of Khartoum. Engineering and medical students had the highest IQ scores, indicating greater cognitive abilities, while primary education students had the lowest IQ scores among the groups studied.

Rindermann et al. (2014) conducted a research study on "Cognitive abilities of Emirati and German engineering university students". The research aimed to assess the cognitive abilities of engineering students from both Emirati and German Universities. The study included 30 participants from each group, with a mean age of 22 years, and utilized mathematical and figural intelligence scales (CogAT) for evaluation. The findings revealed that German engineering students achieved an average IQ score of 116, whereas Emirati students obtained a score of 104 after being converted to UK norms. Interestingly, in both groups, male students exhibited better performance compared to their female peers, with a difference of 2 to 4 IQ points.

Taub et al. (2014) in their study titled "Improving Mathematics: An

Examination of the Effects of Specific Cognitive Abilities on College-age Students' Mathematics Achievement," expanded upon previous research by utilizing structural equation modeling. The findings revealed that German engineering students achieved an average IQ score of 116, whereas Emirati students obtained a score of 104 after being converted to UK norms. Interestingly, in both groups, male students exhibited better performance compared to their female peers, with a difference of 2 to 4 IQ points. The findings highlighted specific cognitive abilities, namely Crystallized Intelligence and Fluid Reasoning, as having direct effects on mathematics achievement. In contrast, the influence of general intelligence was observed to be "indirect" within the college-age sample. This study contributed valuable insights into the relationship between cognitive abilities and mathematics achievement among college students.

Tias et al. (2015) did a research study on "The contribution of intelligence quotient (IQ) on biology academic achievement of senior high school students in Medan, Indonesia" The study encompassed 240 participants, and its findings highlighted a significant correlation between IQ and Biology academic achievement, supported by a statistically significant regression equation with a significant F-value. Furthermore, the analysis of R square demonstrated that IQ accounted for 57.7% of the variance in Biology academic achievement. As a result, the study recommended that Biology teachers take into consideration the influence of IQ when designing their lesson plans to enhance Biology academic performance.

AlAbdulwahab et al. (2016) conducted a study on "Cognitive abilities of health and art college students: a pilot study". The study recognized the challenge high school students face in choosing a college major and the lack of studies examining the use of cognitive ability tests as a tool for aiding this decision-making process. The research utilized a convenience sample of 60 college students from Riyadh, Saudi Arabia, with half majoring in health science and the other half in art. These students had an average age of 19±1.6 years who willingly took part in the research. Their cognitive abilities were evaluated using the self-administered Cognitive Assessment of Minnesota (CAM) scale, overseen by a researcher. The results of the study unveiled noteworthy variations in cognitive abilities between health science and art students, specifically in aspects related to knowledge, calculation, and thinking. However, there was no

significant difference in the social cognitive component between the two groups. The results suggested that health science students exhibited superior cognitive abilities compared to their art major counterparts. This underscored the importance of high school graduates undergoing cognitive ability assessments before choosing their college majors.

Chong and Yeo (2016) did a study on "Cognitive ability and academic achievement of undergraduates". The objective was to investigate the relationship between cognitive ability and academic performance among undergraduates at Universiti Teknologi Malaysia. 336 undergraduate students took part in the study, and the researchers used inferential analysis to investigate the link between cognitive abilities and academic performance. The results indicated a substantial correlation between various cognitive skills, including critical thinking, creative thinking, and metacognition, and academic achievement. However, it is important to note that knowledge was not significantly related to academic success. In addition, multiple regression analysis indicated that critical thinking exhibited the strongest predictive influence on academic performance, while creative thinking had the least predictive impact.

Cormier et al. (2016) conducted a study titled "The Role of Cattell–Horn–Carroll (CHC) Cognitive Abilities in Predicting Writing Achievement during the School-Age Years." The research employed a representative group from the fourth edition of the Woodcock-Johnson Tests of Cognitive Abilities and the Woodcock-Johnson Tests Academic Achievement to investigate the connections between these overarching CHC (Cattell-Horn-Carroll) abilities and academic performance in writing. The study's results highlighted specific broad CHC abilities, specifically Comprehension Knowledge, Processing Speed, and Fluid Reasoning, as significant predictors of foundational writing skills and written expression during a child's school years. Additionally, the research observed fluctuations in the intensity of the link between cognitive abilities and academic achievement in writing as time progressed. This variation was attributed to the increasing complexity of cognitive demands involved in writing as students progressed to higher grades.

Ezeugwu et al. (2016) did a research study titled "Influence of cognitive ability, gender, and school location on students' achievement in senior secondary school

financial accounting" which was conducted within Owerri Education Zone 1 of Imo state, Nigeria. This study was prompted by the underperformance of students in financial accounting in the region. It utilized a causal comparative research approach and involved 284 senior secondary school students enrolled in financial accounting courses during the 2011/2012 academic year at government-owned schools within the specified area. Data collection involved using the Financial Accounting Achievement Test (FAAT) and the Test of Logical Thinking (TOLT). The research results showed that male students outperformed female students significantly in terms of academic achievement. However, there was no statistically significant difference in achievement mean scores between students from rural and urban areas. Additionally, students with high cognitive abilities had significantly higher achievement mean scores. Furthermore, the study identified interaction effects, including the influence of gender and school location, gender and cognitive ability, and school location and cognitive ability on students' performance in financial accounting.

In the study conducted by Kim and Lundberg (2016), titled "A Structural Model of the Relationship Between Student-Faculty Interaction and Cognitive Skills Development Among College Students", the researchers aimed to investigate the connection between interactions between students and faculty members and the enhancement of cognitive abilities in college students. To accomplish this, the research relied on information from the 2010 University of California Undergraduate Experience Survey, which encompassed a group of 5169 senior students from ten different campuses. The key findings of this research were as follows:

1. Increased student-faculty interaction is associated with higher levels of classroom engagement, implying that greater engagement in class occurs when students have more interactions with their professors.
2. Classroom engagement, in turn, plays a facilitative role in the development of students' cognitive skills. This implies that actively participating and engaging in classroom activities can contribute to the enhancement of cognitive abilities.
3. The research highlights that the pathways from student-faculty interaction to desired college outcomes, including cognitive skills development, are more complex than traditional college impact theories or models suggest.

Overall, the study provided valuable insights into the multifaceted relationship

between student-faculty interaction, classroom engagement, and cognitive skills development among college students, emphasizing the importance of these interactions in shaping educational outcomes.

Hutagalung et al. (2022) did a research study titled "A comparative study of children's cognitive ability in Malaysian public and private pre-schools". They aimed to compare the cognitive abilities of children in both public and private pre-schools in Kuala Lumpur, Malaysia. The study included 121 five to six-year-old students chosen from pre-schools through purposive sampling. To assess the children's overall cognitive abilities, the researchers utilized the McCarthy Scales of Children's Abilities (MSCA). The results of the study indicated that the general cognitive skills of children attending both public and private pre-schools were at a moderate level. Importantly, the research indicated that the type of pre-school, parents' level of education, and parents' income level did not have a statistically significant effect on children's cognitive abilities. This comparative study provided valuable insights into the cognitive abilities of children in different types of pre-schools in Malaysia and contributes to our understanding of the general cognitive abilities of these young learners.

2.3.0 Conclusion

A gestalt view of the span of years and studies covered from India and abroad, may be made with the help of the following table:

Table 2.1: ***Details of related studies reviewed***

Sl. No.	Location of Studies	Span of Years	Total
1.	Studies on life skills conducted in India	2009-2023	27
2.	Studies on cognitive abilities conducted in India	1983-2022	24
3.	Studies on life skills done abroad	1998-2023	26
4.	Studies on cognitive abilities done abroad	1958-2022	23
		Total	100

The researcher conducted a comprehensive literature review on the subject of life skills and cognitive abilities. This review aimed to gain a deeper understanding of the current state of research in this field and to undertake a thorough examination of the findings put forth by other researchers in these domains. Table 2.1 illustrates that for over a 25-year timeframe, from 1998 to 2023, there were 53 documented research endeavors focused on life skills conducted in both India and abroad. Additionally, during a 64-year period ranging from 1958 to 2022, a total of 47 studies pertaining to cognitive abilities were identified.

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CHAPTER III

METHODOLOGY

Methodology plays a significant role in all forms of research, outlining the guidelines that researchers must adhere to throughout the study. The methodology should detail the steps taken by the researcher, including aspects such as research design, the selection of the study's population and sample, the methods and tools employed for data collection, how data is administered and collected, the organization of data, and the statistical methods used for data analysis. Therefore, the current chapter on methodology and procedure addresses these key aspects.

3.1.0 Research design

3.2.0 Population, sample and sampling design

3.3.0 Tools used for data collection

3.4.0 Administration of tools and collection of data

3.5.0 Tabulation of data

3.6.0 Statistical techniques for analysis of data

3.1.0 Research design

Descriptive research aims to provide a comprehensive understanding of current conditions. It focuses on examining existing conditions, practices, structures, differences, relationships, opinions, ongoing processes, and observable trends. The present study followed a form of descriptive research that combined elements of intergroup comparison. It involved a survey and fact-finding inquiry into the life skills and cognitive abilities of college students in Mizoram. The study analysed how these factors relate to students' gender, academic streams, their father's employment status, and their father's educational background. Descriptive studies go beyond mere data collection; they encompass the measurement, categorization, analysis, comparison, and interpretation of information. In this particular investigation quantitative analyses had been utilized to achieve the research objectives.

3.2.0 Population, sample and sampling design

The study’s population consisted of all the college students in Mizoram affiliated to Mizoram University as can be seen in table 3.1.

Table: 3.1

College wise number of students

Sl. No.	Name of college	District	Male Students	Female Students	Total no. of students
1	Pachhunga University College	Aizawl	1333	1458	**2791**
2	Govt. Lunglei College	Lunglei	650	601	**1251**
3	Govt. Champhai College	Champhai	445	391	**836**
4	Govt. Serchhip College	Serchhip	217	250	**467**
5	Govt. Aizawl College	Aizawl	1090	1076	**2166**
6	Govt. Saiha College	Saiha	266	231	**497**
7	Govt. Kolasib College	Kolasib	408	330	**738**
8	Govt. Hnahthial College	Hnahthial	102	76	**178**
9	Govt. Hrangbana College	Aizawl	991	1188	**2179**
10	Govt. Lawngtlai College	Lawngtlai	234	155	**389**
11	Govt. Zirtiri Resi. Sc. College	Aizawl	453	369	**822**
12	Govt. Mamit College	Mamit	77	83	**160**
13	Govt. J.Buana College	Lunglei	283	300	**583**
14	HATIM	Lunglei	185	165	**350**
15	Govt. Saitual College	Saitual	112	161	**273**
16	Govt. Khawzawl College	Khawzawl	58	51	**109**
17	Govt. Zawlnuam College	Mamit	44	47	**91**
18	Govt. Aizawl North College	Aizawl	815	677	**1492**
19	Govt. Aizawl West College	Aizawl	606	522	**1128**
20	Govt. T.Romana College	Aizawl	753	591	**1344**
21	Govt. J.Thankima College	Aizawl	598	466	**1064**
22	Govt. Kamalanagar College	Lawngtlai	313	101	**414**
23	Govt. Johnson College	Aizawl	676	505	**1181**
24	Faith College	Aizawl	38	16	**54**
25	Aizawl City College	Aizawl	22	9	**31**
26	Divine Mercy College	Aizawl	11	8	**19**
27	St. Xavier's College	Aizawl	24	12	**36**
28	Helen Lowry College	Aizawl	89	65	**154**
29	Kawnpui College	Kolasib	16	29	**45**
30	Mizoram Christian College	Aizawl	139	147	**286**
TOTAL			11048	10080	**21128**

(Source: CDC-MZU, 2022-2023)

In order to study and compare life skills and cognitive abilities of college students, 523 students were selected as samples for the present study. The final sample comprised of 230 males and 293 female college students from the arts, science and commerce stream studying in colleges of Mizoram affiliated to Mizoram University.

The samples were selected following stratified random sampling technique taking districts located in the North, East, West, South and Central Mizoram as strata. The name of colleges and sample distribution of the students is presented in the following table no. 3.2

Table: 3.2

Colleges and number of students selected for the sample

District	**Name of Colleges**	**No. of male students**			**No. of female students**			**Total**
		Sc	Com	Arts	Sc	Com	Arts	
Aizawl (Central)	Government Hrangbana College	0	23	39	0	21	27	110
	Government Aizawl College	0	9	0	0	31	0	40
	Pachhunga University College	68	12	6	63	35	26	210
	Government J. Thankima College	0	0	11	0	0	14	25
Lunglei (South)	Government Lungei College	21	0	0	16	0	0	37
	Government J.Buana College	0	8	0	0	12	0	20
	Higher and Technical Institute of Mizoram	0	13	0	0	7	0	20
Champhai (East)	Government Champhai College	0	0	8	0	0	22	30
Kolasib (North)	Government Kolasib College	0	0	5	0	0	11	16
Mamit (West)	Government Mamit College	0	0	7	0	0	8	15
	Total	**89**	**65**	**76**	**79**	**106**	**108**	**523**

3.3.0 Tools used for data collection

Following are the tools used for the present study:

1. Life Skills Inventory (2023) developed by the investigator.
2. Raven's Standard Progressive Matrices test (1993) developed by John C. Raven.

3.3.1 Life skills inventory (2023):

The investigator constructed a life skills inventory following Likert's Method. This scale comprises a total of 72 items, with 49 of them being positive statements and 23 being negative statements. The items had been selected on the basis of different components such as self-awareness, empathy, decision making, problem solving, critical thinking, creative thinking, interpersonal relationship, etc. The reliability and validity of this life skills inventory were assessed, with a reliability coefficient of 0.79 and a validity coefficient of 0.749, calculated using the Product Moment Correlation method. Additionally, norms for the scale were established and presented in the form of z-scores and Stanine grades.

Since the construction and standardization of 'Life Skills Inventory' was one of the aims of the study, detailed information about the methods and procedures used for this purpose can be found in Chapter-IV. Furthermore, a sample of the Life Skills Inventory is attached in APPENDIX - I.

3.3.2 Raven's standard progressive matrices test (1993):

The standard progressive matrices designed by Raven (1993) measure the educative component of 'g' as defined in Spearman's theory of cognitive ability. consists of five sets or series of diagrammatic puzzles that demonstrate sequential changes in two dimensions simultaneously. Each puzzle within these sets contains a missing element, and the individual undergoing the test is required to identify this missing component from the given options.

It consists of 60 problems divided into five sets (A, B, C, D and E) each made up of 12 problems. Within each set, the initial problem is designed to be straightforward and self-evident. Subsequent problems in each set build upon the concepts presented earlier, progressively increasing in complexity. This structured

approach serves as a standard training method, guiding individuals in problem-solving techniques. The five sets offer five distinct opportunities to grasp the required thought process and provide five sequential evaluations of a person's intellectual capacity. To maintain engagement and prevent fatigue, each problem is presented with clarity, accurate illustrations, and an effort to make them visually appealing.

The initial purpose of the Standard Progressive Matrices was to encompass a broad spectrum of cognitive abilities and to be equally applicable to individuals of varying ages, regardless of their educational background, nationality, or physical state.

Reliability:

Raven's study in 1948 indicated that the retest reliability of the test varied between 0.83 and 0.93 across different age groups. In a separate study in 1950, Sinha found a reliability coefficient of 0.90. Burke (1972) using split-half reliability reported correlations ranging from 0.83 with younger adults to 0.95 for subjects older. Dolke (1976) reported that the test-retest reliability at one and a half months interval was 0.83. The Kuder-Richardson formula yielded an interval consistency reliability of 0.67, while the Spearman Brown formula resulted in an odd-even reliability of 0.73.

Validity:

Standard Progressive Matrices correlated 0.86 with the Terman Merill scale, and found to have a ‘g’ saturation of 0.82 (Raven, 1948). Sinha (1950) reported a validity coefficient of 0.54. In 1958, the Bureau of Psychology conducted a study and found that the Raven's Progressive Matrices test had a validity coefficient of 0.53 when compared to the Terman-Merill scale, 0.51 when compared to the NIIP form Relation Test, 0.58 when compared to the National Institute of Industrial Psychology NIIP 70/23, and 0.53 when compared to the General Intelligence Test (Verbal). The study also included a sample of the Raven's Progressive Matrices and an answer sheet, which can be found in APPENDIX – II.

3.4.0 Administration of tools and collection of data

Both the Life Skills Inventory and Raven’s Standard Progressive Matrices test were administered to all 523 college students. The study's objectives and guidelines for marking their chosen responses were effectively communicated to the participants. When it came to the life skills inventory, students were informed that there were no

correct or incorrect answers. They were given sufficient time to reflect on the statements to ensure genuine responses. Participants were guaranteed that their answers would be treated with utmost confidentiality and solely utilized for research purposes. During the collection of completed responses, care was taken to confirm that all questions and statements had been addressed, and the necessary personal information was provided by the participants.

3.5.0 Tabulation of data

The information gathered from the 523 college students underwent a thorough examination, categorization, and assessment using established protocols. Following the evaluation of responses from both the Life Skills Inventory and Standard Progressive Matrices, a tabulation process was conducted. Each student was allocated a unique identification number based on the specific variable under investigation. The obtained scores were subsequently recorded in an Excel spreadsheet and subjected to statistical analysis using the specified statistical methods for the study's analysis.

3.6.0 Statistical technique for analysis

In consideration of the data's characteristics and the study's objectives, the researcher utilized the following statistical methods for data analysis:

1. ***Descriptive statistics measures:*** Various measures such as Central tendency, Percentages, z-score, Stanine grade, and Percentiles were employed to understand the distribution of scores and classify students into different categories based on the nature of their scores.
2. ***Test of significance for mean difference:*** To assess the significance of differences in mean scores among different groups categorized by gender, field of study, father's employment status, and father's educational qualification, the t-test was applied.
3. ***Co-efficient of correlation:*** The Pearson Product Moment Correlation was used to investigate the relationship between life skills and cognitive abilities among college students in Mizoram.

In summary, these statistical techniques were chosen based on the data's characteristics and the specific research objectives to effectively analyse the collected data.

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CHAPTER IV
ANALYSIS AND INTERPRETATION

This present chapter focuses on the examination and comprehension of the gathered data. As outlined in the initial chapter, the primary aim of this study is to assess the proficiency of life skills among college students in Mizoram. Additionally, it aims to evaluate and compare students' life skills based on various factors, including gender, chosen field of study, the employment status of their fathers, and their fathers' educational qualifications.

The study also aims to find out the cognitive abilities of college students in Mizoram, and to compare students' cognitive abilities with respect to gender and stream of study, fathers' working status and fathers' level of educational qualifications, and thereby to study the relationship between life skills and cognitive abilities of college students in Mizoram. Finally, it aims to make suggestions for developing life skills among college students in Mizoram.

The study gathered data from college students in Mizoram through the utilization of two assessment tools: the Life Skills Inventory, designed and developed by the researcher, and Raven's Standard Progressive Matrices (1993), created by John C. Raven. Subsequently, the responses provided by the participants underwent evaluation according to established scoring protocols. These scores were then organized, tabulated, and subjected to a comprehensive analysis using conventional statistical methods. The analysis was conducted with a focus on aligning it with the study's objectives. The study's findings were subsequently interpreted in a meaningful manner. In this chapter, the outcomes of the research are presented in accordance with the objectives outlined in the first chapter:

1. To construct and standardize a life skills inventory for college students.
2. To assess the overall and component-wise level of life skills of college students in Mizoram.
3. To assess the level of cognitive abilities of college students in Mizoram.
4. To compare the different components of life skills and cognitive abilities of college students with reference to their gender.

5. To compare the different components of life skills and cognitive abilities of college students with reference to their stream of study.
6. To compare the different components of life skills and cognitive abilities of college students with reference to their father's working status.
7. To compare the different components of life skills and cognitive abilities of college students with reference to their father's level of educational qualification.
8. To find out the relationship between different components of life skills and cognitive abilities of college students.
9. To make suggestions for developing life skills and enhancing cognitive abilities of college students in Mizoram.

4.1.0 Construction and standardization of a life skills inventory for college students

The researcher chose to develop a new life skills inventory specifically for college students, despite the existence of several existing inventories. This decision was made based on the recognition that when the demographics and characteristics of a population change, it is advisable to have an up-to-date inventory that aligns with the specific attributes of the population from which samples are being selected. This new inventory could establish reliability and validity for the population under study. Moreover, updated norms for the inventory can be prepared. Thus, aiming for precision, the investigator developed and standardized a Likert-style life skills inventory specifically for college students, updating its norms according to the sample. The process employed for its creation and standardization is outlined below:

4.1.1 Selection of items

In order to formulate the statements needed for measuring college students' life skills, the investigator reviewed various standardized life skills inventories and extensively consulted literature and books on the subject. After studying these existing scales, books, and literature, a preliminary draft comprising 124 statements for the life skills inventory was meticulously crafted. This thorough process aimed to incorporate a comprehensive range of statements that could accurately capture the genuine life

skills exhibited by college students. These statements/items were prepared keeping in view different dimensions related to life skills such as self-awareness skills, empathy skills, problem solving skills, decision making skills, critical thinking skills, creative thinking skills, interpersonal relationship skills, effective communication skills, coping with stress and emotion.

Content validity:

Validity refers to how well an instrument accurately assesses what it intends to measure and functions as intended. In the case of the draft statements, they were reviewed and assessed for content validity by a panel of twelve experts. These experts included professionals with expertise in the fields of education and psychology. Their role involved both editing the draft statements and evaluating their content validity. Below is a list of the experts who were consulted to ensure the content validity of the life skills inventory: (1) Prof. H.Malsawmi, Department of Education, MZU, (2) Prof. Lalbiakdiki Hnamte, Department of Education, MZU, (3) Prof. Lokanath Mishra, Department of Education, MZU, (4) Prof. Lynda Zohmingliani, Department of Education, MZU, (5) Dr Lalmuanzuali, Associate Professor, Department of Education, MZU, (6) Dr Lahriatpuii, Department of Education, MZU, (7) Dr Prateek Chaurasia, Department of Education, MZU, (8) Dr Sweta Dvivedi, Department of Education, MZU, (9) Dr Lalrinzuali Fanai, Department of Education, MZU, (10) Prof. Lalfamkima Varte, Department of Psychology, MZU, (11) Prof. HK Laldinpuii Fente, Department of Psychology, MZU, (12) Ramdinthangi, Joint Director, SCERT.

Following input from experts, adjustments were made to the initial inventory draft. Certain statements were removed, new ones added, and some were altered based on their recommendations. As a result, 112 statements were preserved for the preliminary draft of the life skills inventory.

4.1.2 Pretesting of the preliminary draft

Before conducting a trial run of the inventory with college students, the researcher conducted a preliminary test with twenty students from Govt. North College. These students were asked to provide feedback on the clarity and comprehensibility of the language used in the draft. Additionally, they were tasked with identifying any issues they encountered while responding to the items. The

purpose of this exercise was to determine whether the inventory would be suitable and well-received by the intended population. Notably, no further revisions or modifications were made to the instructions or language of the inventory after incorporating the feedback received from these students.

4.1.3 Try out

Life Skills Inventory consisting of 112 items was then prepared for the final try out. This was administered to 100 students of Govt. Hrangbana College who were randomly selected. The inventory's front cover contained clear and self-explanatory instructions, eliminating the need for additional guidance. Respondents were simply asked to provide their responses truthfully. Subsequently, after the inventory was administered to 100 college students, item analysis was conducted by determining the discrimination value for each item.

4.1.4 Item discrimination

Following the administration of the inventory to 100 college students, a Likert scoring method was employed. All the scores were organized in ascending order, and both the upper 27% and the lower 27% of scores were reserved for the purposes of item analysis and discrimination.

The life skills inventory underwent a thorough analysis process. Initially, the mean and standard deviation were calculated separately for the top and bottom groups, which were selected based on their scores. Subsequently, t-values were computed to assess the significance of differences in scores between these two groups for all 112 statements/items. Upon completion of this step, statements with t-values equal to or greater than 2.01, signifying significance at a 0.05 confidence level, were retained for the final inventory. Statements with t-values less than 2.01 were rejected. Following the item discrimination process, a total of 40 statements were further eliminated. As a result, the final version of the inventory used for data collection consisted of 72 statements. The Mean and Standard Deviation values for both the top and bottom groups on each of the 112 statements, along with the discrimination values represented by 't-values,' can be found in Table No. 4.1

Table 4.1

Mean, standard deviation and t-value of high and low groups on different items of life skills inventory

	High Group		Low Group		t- value	Significance
Item No.	**Mean**	**SD**	**Mean**	**SD**		
1	4.30	0.71	3.57	0.83	3.48	**
2	3.33	1.15	2.4	0.73	3.58	**
3	4.37	0.87	2.81	1.12	5.78	**
4	3.96	1.01	3.48	1.03	1.71	NS
5	3.33	1.15	2.7	0.98	2.10	*
6	3.63	1.09	2.85	0.85	3.00	**
7	3.85	0.97	3.7	0.76	0.63	NS
8	3.81	0.98	3.67	0.81	0.57	NS
9	3.04	1.26	2.67	1.09	1.17	NS
10	3.74	0.93	3.22	0.87	2.14	*
11	2.70	1.18	2.44	0.99	0.88	NS
12	4.07	0.62	3.70	1.02	1.62	NS
13	3.41	1.34	3.07	1.27	0.94	NS
14	4.89	1.06	3.07	1.12	6.07	**
15	4.81	0.40	3.81	1.06	4.55	**
16	4.00	1.70	2.89	1.03	2.85	**
17	3.59	1.13	3.37	0.73	0.85	NS
18	3.56	1.28	2.93	1.09	5.70	**
19	3.19	1.30	2.59	0.73	7.50	**
20	2.74	1.07	2.37	0.77	1.54	NS
21	4.04	1.14	3.30	1.05	2.47	*
22	3.52	1.23	3.00	1.09	1.63	NS
23	2.81	1.24	2.59	0.99	0.69	NS
24	3.44	1.23	2.89	0.96	1.83	NS
25	3.89	0.99	3.37	0.95	2.00	NS
26	4.22	0.63	3.33	0.91	4.24	**
27	3.59	1.10	2.19	0.73	5.71	**
28	4.26	0.69	3.30	0.70	4.80	**

29	3.44	1.23	1.89	0.42	6.20	**
30	2.70	0.97	2.59	0.73	0.45	NS
31	4.41	0.56	3.26	1.00	5.23	**
32	4.04	0.92	2.85	0.97	4.96	**
33	4.22	0.69	3.37	0.77	4.25	**
34	4.56	0.82	3.00	0.98	6.00	**
35	4.48	0.63	3.11	0.83	6.85	**
36	3.78	1.03	3.63	0.77	0.63	NS
37	2.81	1.12	2.59	0.73	0.85	NS
38	3.67	0.98	3.41	0.73	1.08	NS
39	3.74	0.93	3.78	0.73	0.18	NS
40	4.22	0.63	3.26	0.75	4.80	**
41	2.85	1.21	2.81	0.72	0.15	NS
42	3.59	1.16	3.52	0.73	0.27	NS
43	3.33	1.12	3.19	0.94	0.50	NS
44	3.52	1.07	3.74	0.75	0.92	NS
45	3.07	1.15	2.07	0.66	3.85	**
46	4.30	0.65	3.48	0.74	4.10	**
47	4.30	0.59	3.63	0.73	3.94	**
48	3.52	1.67	2.33	0.81	4.58	**
49	4.11	0.50	3.60	0.98	2.32	*
50	3.89	0.99	3.41	0.56	2.18	*
51	3.41	1.16	2.56	0.92	3.04	**
52	3.56	1.13	2.85	1.30	2.15	*
53	4.22	0.57	3.81	0.77	2.41	*
54	3.30	0.93	2.59	0.73	3.23	**
55	4.37	0.56	3.44	0.79	5.47	**
56	3.89	0.92	3.00	0.86	3.71	**
57	4.19	0.85	3.26	0.84	3.88	**
58	4.11	0.99	2.89	1.74	4.07	**
59	3.63	1.06	2.59	1.06	3.71	**
60	3.96	0.88	2.93	0.86	4.29	**
61	4.60	0.54	3.67	0.81	5.47	**

62	3.22	1.34	2.33	0.81	2.97	**
63	4.19	0.46	3.41	0.82	3.9	**
64	4.15	0.70	3.56	0.79	2.95	**
65	3.78	0.99	3.00	1.22	3.9	**
66	3.89	0.92	3.41	1.10	1.85	NS
67	4.04	0.63	3.52	0.88	2.60	*
68	4.00	0.64	3.22	0.73	3.90	**
69	2.41	1.16	2.89	1.07	1.60	NS
70	4.15	0.70	3.15	0.93	4.55	**
71	3.22	1.10	3.04	1.03	0.64	NS
72	4.15	0.93	3.22	0.95	3.88	**
73	4.56	0.49	3.63	1.15	3.88	**
74	3.26	1.26	2.78	1.34	1.33	NS
75	4.22	0.74	2.52	1.26	6.07	**
76	4.59	0.88	3.48	0.99	4.27	**
77	3.44	1.32	2.74	1.23	2.00	NS
78	4.26	0.51	3.37	0.87	4.45	**
79	3.37	0.95	2.93	1.05	1.69	NS
80	3.89	0.79	3.37	0.82	2.60	*
81	4.33	0.55	3.44	0.92	4.45	**
82	4.44	0.84	3.48	1.26	3.20	**
83	3.67	1.09	3.00	1.02	2.39	*
84	3.59	1.16	2.70	1.08	2.97	**
85	4.15	0.97	3.11	1.26	3.47	**
86	3.70	1.15	3.63	0.91	0.25	NS
87	3.59	1.06	2.81	0.86	3.00	**
88	3.93	0.71	3.22	0.95	3.23	**
89	4.30	0.65	3.52	0.83	3.55	**
90	2.74	1.37	2.33	1.05	1.24	NS
91	4.37	0.73	3.67	0.81	3.50	**
92	4.07	1.36	3.67	1.12	1.14	NS
93	3.04	1.10	2.26	0.58	3.25	**
94	4.37	0.48	3.67	0.81	4.12	**

95	4.04	0.79	3.44	0.79	3.00	**
96	4.48	0.50	3.19	1.15	5.38	**
97	4.48	0.69	3.07	1.09	5.88	**
98	4.41	0.73	3.00	1.19	5.42	**
99	2.59	1.28	2.37	0.82	0.79	NS
100	3.70	1.12	3.20	1.30	1.52	NS
101	3.33	1.39	2.85	1.11	1.37	NS
102	2.52	1.48	2.41	1.20	0.31	NS
103	3.52	1.17	3.04	1.17	1.50	NS
104	3.89	1.13	2.67	1.09	4.07	**
105	2.56	0.74	2.81	1.15	0.96	NS
106	2.89	1.07	2.81	1.09	0.29	NS
107	3.74	0.96	3.26	0.84	2.18	*
108	2.00	1.05	1.89	0.50	0.50	NS
109	3.93	0.94	2.81	0.98	4.31	**
110	2.78	1.26	2.41	0.95	1.23	NS
111	4.11	1.03	3.48	1.14	2.10	*
112	3.85	1.11	3.11	1.17	2.31	*

NS = not significant, * significant at 0.5 level, ** significant at 0.1 level

4.1.5 Establishment of reliability

Reliability pertains to the consistency and stability of results obtained from an assessment tool. A reliable test produces consistent scores when taken multiple times by the same individual and is crucial for ensuring the test's validity. To establish the reliability of the newly developed Life Skills Inventory, the researcher employed the 'Test-Retest Method.' This involved administering the inventory twice within a two-week interval at Govt. Hrangbana college. In the initial test, 120 students participated, and after a two-week interval, the same class was administered a second test. However, due to some students being absent during the second test, only 102 students were able to complete it. Out of these, a total of 95 students took both the first and second tests. The answer sheets of these 95 students were meticulously scored and recorded, while the responses of the students who did not attempt both tests were excluded from the analysis.

To assess the reliability of the life skills inventory, the coefficient of reliability was calculated by employing the "Product Moment Correlation" method between the scores of the two tests. The resulting coefficient of reliability was determined to be 0.79, indicating an adequately reliable measure for the life skills inventory. The test-retest scores of all 95 students, which played a crucial role in establishing the reliability coefficient of the scale, are presented in Table 4.2

Table 4.2

Test-retest scores for determining the reliability of the life skills inventory

Sl. No	Score on first test	Score on second test	Sl. No	Score on first test	Score on second test
1	214	209	**49**	234	231
2	286	286	**50**	254	231
3	221	217	**51**	253	226
4	230	230	**52**	200	228
5	289	290	**53**	243	243
6	296	276	**54**	257	227
7	251	216	**55**	277	244
8	302	293	**56**	248	262
9	263	252	**57**	254	225
10	235	258	**58**	277	273
11	230	246	**59**	233	233
12	230	254	**60**	252	246
13	245	237	**61**	228	234
14	212	211	**62**	231	221
15	318	324	**63**	221	243
16	267	275	**64**	220	237
17	250	237	**65**	295	279
18	241	231	**66**	246	238
19	248	250	**67**	255	257
20	256	246	**68**	228	232
21	272	251	**69**	258	221
22	207	207	**70**	266	257
23	223	247	**71**	236	229

24	258	242	**72**	248	246
25	206	241	**73**	250	225
26	247	216	**74**	250	229
27	235	253	**75**	260	270
28	259	269	**76**	286	264
29	218	222	**77**	245	220
30	279	279	**78**	256	240
31	249	262	**79**	249	243
32	266	262	**80**	258	254
33	229	248	**81**	222	249
34	327	317	**82**	246	235
35	240	239	**83**	321	320
36	262	254	**84**	253	250
37	234	227	**85**	258	258
38	258	230	**86**	238	239
39	262	252	**87**	280	270
40	242	252	**88**	264	250
41	239	236	**89**	228	249
42	242	247	**90**	227	228
43	282	275	**91**	262	265
44	254	222	**92**	255	256
45	247	248	**93**	245	238
46	283	273	**94**	240	238
47	260	273	**95**	259	277
48	244	233			

4.1.6 Establishment of validity

Validity refers to how effectively a tool measures what it intends to and operates as intended. To ensure accurate and precise results, it is crucial for a measurement to possess sufficient validity. In the case of the current Life Skills Inventory, content validity was confirmed by consulting experts in the fields of education and psychology. These experts evaluated whether the content of the items,

specifically related to life skills, accurately represented the desired characteristics. The experts affirmed the content's validity.

For establishing criterion-related validity, the researcher administered both the newly developed Life Skills Inventory and Dr. Raina Tiwari's "Life Skill Scale" to 100 Govt. Hrangbana College students. Dr. Tiwari's scale comprised 40 items, out of which 20 are Favourable statements and the other 20 are Unfavourable statements and are scored on a Likert scale. Upon scoring and computing the correlation coefficient between the two tests, a correlation of 0.749 emerged. This correlation indicates that the newly constructed Life Skills Inventory sufficiently captures the aspects of college students' life skills. This way, the inventory was validated by means of concurrent validity. The following table, Table 4.3 shows the scores of the criterion test and the scores of the present inventory.

Table 4.3

Scores on two tests to compute criterion related validity

Sl. No	Score on criterion test	Score on the present inventory	Sl. No	Score on criterion test	Score on the present inventory
1	219	116	**51**	262	147
2	209	119	**52**	225	121
3	256	157	**53**	273	154
4	286	146	**54**	233	101
5	217	115	**55**	246	125
6	230	126	**56**	234	127
7	290	153	**57**	221	130
8	276	161	**58**	243	110
9	216	107	**59**	237	113
10	293	157	**60**	279	139
11	252	155	**61**	238	122
12	246	125	**62**	257	132
13	254	114	**63**	232	131
14	237	124	**64**	257	132
15	211	116	**65**	229	126
16	324	171	**66**	231	129
17	275	136	**67**	246	144
18	237	124	**68**	225	120

19	250	160	**69**	229	104
20	246	136	**70**	270	151
21	251	132	**71**	264	147
22	207	123	**72**	220	118
23	247	123	**73**	223	117
24	242	134	**74**	240	131
25	241	120	**75**	243	126
26	216	118	**76**	249	124
27	253	135	**77**	235	121
28	279	150	**78**	250	142
29	262	135	**79**	258	132
30	262	137	**80**	239	115
31	248	127	**81**	270	135
32	317	145	**82**	250	134
33	254	137	**83**	249	130
34	227	119	**84**	228	123
35	230	115	**85**	265	132
36	252	136	**86**	238	113
37	252	136	**87**	238	123
38	247	135	**88**	277	131
39	275	159	**89**	244	142
40	222	119	**90**	279	144
41	248	143	**91**	241	122
42	273	150	**92**	241	123
43	273	152	**93**	221	109
44	233	115	**94**	292	136
45	231	131	**95**	266	138
46	231	131	**96**	257	135
47	226	115	**97**	216	124
48	243	128	**98**	229	127
49	227	130	**99**	266	132
50	244	119	**100**	248	129

4.1.7 Scoring procedure and serial number of positive and negative items

The scoring pattern employed for the current Life Skills Inventory aligns with the Likert scale. Respondents were tasked with providing their individual perspectives on each statement using a five-point scale, including options like Strongly Agree, Agree, Undecided, Disagree, and Strongly Disagree. To calculate scores, positive statements were assigned values of 5, 4, 3, 2, 1, while negative statements received scores of 1, 2, 3, 4, 5. Given that there are a total of 72 statements in the scale, the highest attainable score on the test is (72 X 5) 360, whereas the lowest achievable score is (72 X 1) 72. This scoring approach is designed to capture the varying degrees of agreement or disagreement with the statements, allowing for a comprehensive assessment of respondents' views. The item numbers associated with positive and negative statements can be found in Table 4.4

Table 4.4

Item numbers for positive and negative statements

Serial no.	Types of statements	Item Numbers	Total
1	Positive	1, 5, 6, 7, 8, 9, 12, 13, 15, 17, 19, 21, 22, 24, 25, 27, 28, 31, 33, 34, 35, 37, 38, 39, 41, 42, 44, 45, 47, 48, 49, 51, 52, 53, 55, 57, 59, 60, 61, 63, 64, 65, 66, 67, 68, 69, 70, 71, 72	49
2	Negative	2, 3, 4, 10, 11, 14, 16, 18, 20, 23, 26, 29, 30, 32, 36, 40, 43, 46, 50, 54, 56, 58, 62	23

4.1.8 Norms and interpretation of life skills inventory

Norms are the basis for interpreting test scores and they minimize the interpretive error of a measuring instrument. In order to establish the norms for the present life skills inventory, the investigator administered the newly constructed life skills inventory to 523 college students from the different districts of Mizoram. Thereafter, it was scored in accordance with the stated procedure. The investigator

decided to offer two types of norms for interpreting the present inventory. One is based on z-score and the other one is based on stanine.

(1) **Z-score norms:** The raw scores of all 523 college students were transformed into z-score as shown in the following table no. 4.5

Table 4.5

Raw score with corresponding z-score

Raw score	Z-score	Raw score	Z-score	Raw score	Z-score	Raw score	Z-score
174	-3.67	231	-1.02	257	0.18	283	1.39
188	-3.02	232	-0.98	258	0.23	284	1.43
193	-2.79	233	-0.93	259	0.27	285	1.48
201	-2.42	234	-0.89	260	0.32	286	1.53
202	-2.37	235	-0.84	261	0.37	287	1.57
206	-2.19	236	-0.79	262	0.41	288	1.62
208	-2.09	237	-0.75	263	0.46	289	1.67
209	-2.05	238	-0.70	264	0.51	290	1.71
210	-2.00	239	-0.65	265	0.55	292	1.81
211	-1.95	240	-0.61	266	0.60	293	1.85
212	-1.91	241	-0.56	267	0.65	294	1.90
214	-1.81	242	-0.51	268	0.69	295	1.95
216	-1.72	243	-0.47	269	0.74	296	1.99
217	-1.67	244	-0.42	270	0.79	301	2.22
218	-1.63	245	-0.38	271	0.83	303	2.32
219	-1.58	246	-0.33	272	0.88	308	2.55
220	-1.54	247	-0.28	273	0.92	309	2.60
221	-1.49	248	-0.24	274	0.97	317	2.97
222	-1.44	249	-0.19	275	1.02	319	3.06
223	-1.40	250	-0.14	276	1.06	320	3.11
224	-1.35	251	-0.10	277	1.11	328	3.48
225	-1.30	252	-0.05	278	1.16	329	3.52
227	-1.21	253	0.00	279	1.20	340	4.03
228	-1.16	254	0.04	280	1.25		
229	-1.12	255	0.09	281	1.30		
230	-1.07	256	0.14	282	1.34		

Based on the range of z-score, life skills were classified into 7 levels. These levels were further combined and classified into 3 categories for interpretation of the present study as depicted in the following table no. 4.6.

Table 4.6

Norms for interpretation of the levels of life skills based on z-score

Sl.No.	Range of z-Score	Levels of Life Skills	Interpretation
1	+2.01 and above	Extremely good life skills	Good life skills
	+1.26 to +2.00	Good life skills	
2	+0.51 to +1.25	Above average life skills	Moderate life skills
	-0.50 to +0.50	Average life skills	
	-1.25 to -0.51	Below average life skills	
3	-2.00 to -1.26	Poor life skills	Poor life skills
	-2.01 and below	Extremely poor life skills	

(2) **Stanine norms:** The stanine scale is applied to the raw scores of 523 college students through a process involving frequency distribution and percentile ranking based on the normal distribution curve. This results in the distribution of scores into nine stanine categories. The breakdown of students in each stanine is as follows: the first stanine includes 4 percent of students, the second stanine includes the next 7 percent, the third stanine includes 12 percent, and the fourth stanine includes the subsequent 17 percent. The middle or fifth stanine encompasses 20 percent of students, followed by the sixth stanine covering 17 percent, the seventh stanine with 12 percent, the eighth stanine with 7 percent, and the top or ninth stanine with 4 percent of the total cases.

This stanine grading system serves as a normative reference to interpret raw scores. Specifically, stanine 1 indicates extremely poor life skills, stanine 2 and 3 represent poor life skills, stanine 4, 5, and 6 signify normal life skills, stanine 7 and 8 denote good life skills, and stanine 9 reflects extremely good life skills.

For a detailed breakdown of score ranges and their corresponding stanine grades and interpretations the scores are given in the following Table 4.7

Table 4.7

Norms for interpretation of life skills based on stanine

Sl. No	Score Range	Stanine Grade	Interpretation
1	Above 292	9	Extremely good life skills
2	281-291	8	Good life skills
	270-280	7	
3	259-269	6	Moderate life skills
	248-258	5	
	237-247	4	
4	226-236	3	Poor life skills
	216-225	2	
5	Below 215	1	Extremely poor life skills

4.2.0 Assessment of overall and component-wise level of life skills of college students in Mizoram

In order to evaluate the life skills of college students in Mizoram, the researcher utilized a Life Skills Inventory that was developed by the researcher. The assessment involved categorizing the respondents' level of life skills, and this information is presented in Table 4.8 and Figure 4.1. The data in these visuals represent the number and percentage of respondents within each level of life skills. It's worth noting that the author had previously established norms for these levels, as indicated in Table No. 4.5 and 4.6.

In summary, the Life Skills Inventory created by the investigator was employed to assess the life skills of college students in Mizoram, and the results are depicted in Table 4.8 and Figure 4.1, with reference to established norms from previous tables.

Table 4.8

Level of life skills of college students in Mizoram

Component	N	Mean	SD	Good	Moderate	Poor
Life Skills	523	253.08	21.54	152 (29.06%)	218 (41.68%)	153 (29.26%)

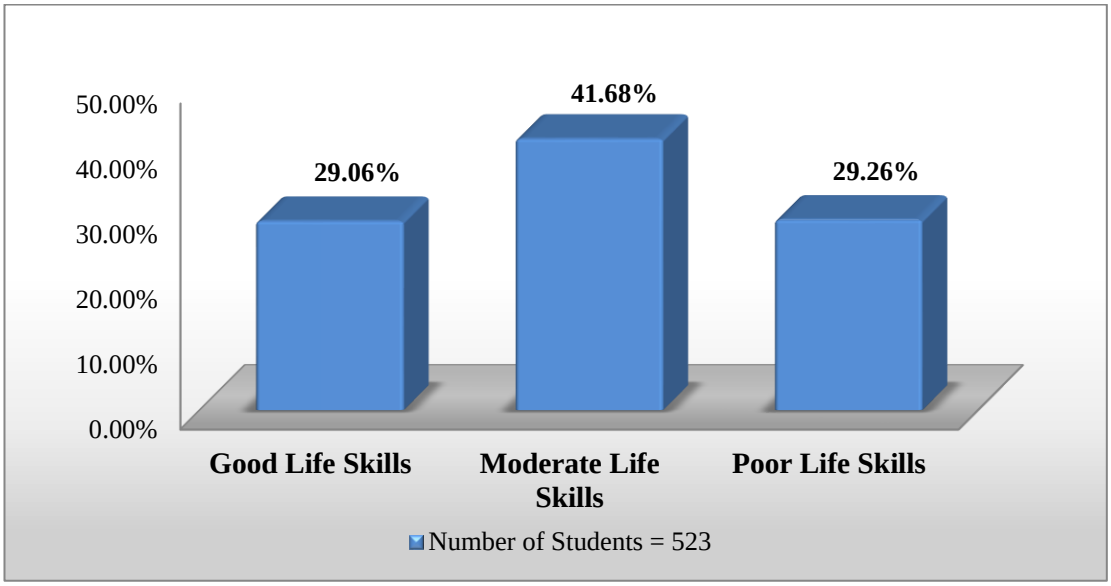

Figure 4.1*: Level of life skills of college students in Mizoram*

Looking at table 4.7, out of all the 523 respondents it becomes evident that college students having moderate life skills constitute the highest percentage (41.68%). The table also shows that 29.06 percent of college students in Mizoram have good life skills while 29.26 percent have poor life skills. The mean score of life skills of college students in Mizoram is 253.08 and standard deviation is 21.54 respectively. The table and figure clearly shows that almost half of the college students of Mizoram had moderate life skills, while those having good and poor life skills are almost similar.

The component-wise level of life skills of college students in Mizoram are depicted in the following table 4.9

Table 4.9

Level of thinking skills, social skills and emotional skills of college students in Mizoram

Components	N	Good	Moderate	Poor
1. Thinking skills	523	151 (28.87%)	223 (42.64%)	149 (28.49%)
- *Self-awareness*	523	172 (32.89%)	188 (35.95%)	163 (31.16%)
- *Problem solving*	523	146 (27.92%)	212 (40.53%)	165 (31.55%)
- *Decision making*	523	94 (17.97%)	316 (60.42%)	113 (21.61%)
- *Critical thinking*	523	121 (23.14%)	235 (44.93%)	167 (31.93%)

- *Creative thinking*	523	130 (24.86%)	248 (47.42%)	145 (27.72%)
2. Social skills	523	149 (28.49%)	219 (41.87%)	155 (29.64%)
- *Empathy*	523	136 (26.00%)	229 (43.79%)	158 (30.21%)
- *Interpersonal relationship*	523	172 (32.89%)	203 (38.81%)	148 (28.30%)
- *Effective communication*	523	164 (31.36%)	202 (38.62%)	157 (30.02%)
3. Emotional skills	523	174 (33.27%)	206 (39.39%)	143 (27.34%)
- *Coping with emotion*	523	150 (28.68%)	229 (43.79%)	144 (27.53%)
- *Coping with stress*	523	124 (23.71%)	240 (45.89%)	159 (30.40%)

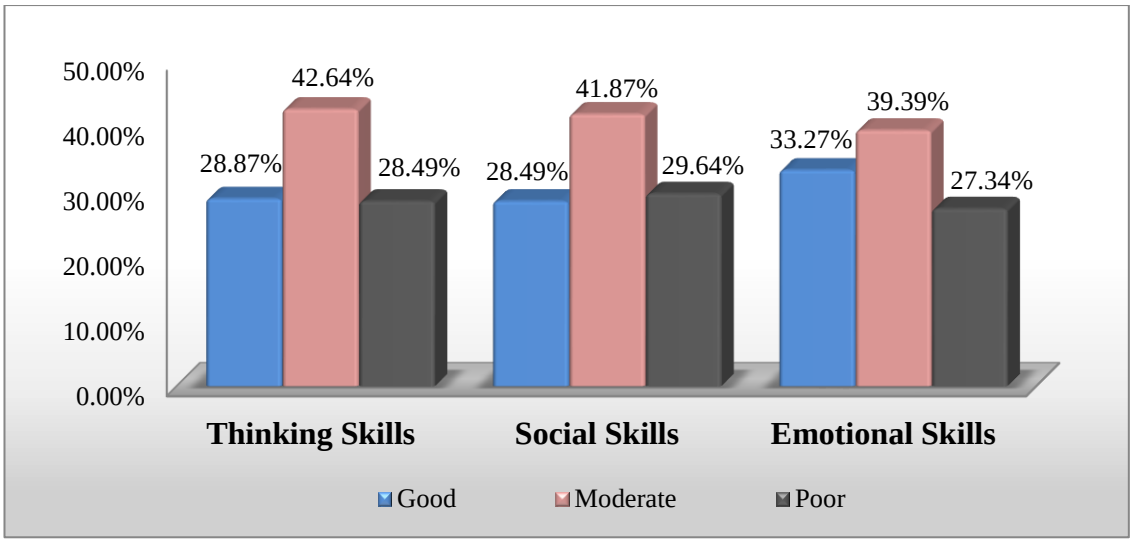

Figure 4.2: ***Level of thinking skills, social skills and emotional skills of college students in Mizoram***

Table 4.9 shows that college students with moderate thinking skills form the largest percentage (42.64%) in Mizoram, while 28.87 percent have good thinking skills and 28.49 percent have poor thinking skills.

With respect to the components under ***thinking skills***:

(i) As low as 35.95 percent of college students have moderate self-awareness, followed by 32.89 percent with good self-awareness skills, and 31.16 percent exhibiting poor self-awareness.

(ii) The highest percentage (40.53%) display moderate problem-solving skills, with 27.92 percent showcasing good problem-solving abilities, and 31.55 percent having poor problem-solving skills.

(iii) Majority (60.42%) of the students possess moderate decision-making skills, while 17.97 percent have good decision-making skills, and 21.61 percent show poor skills.

(iv) The highest proportion of students (44.93%) exhibits moderate critical thinking skills, followed by 23.14 percent with good critical thinking skills, and 31.93 percent having poor critical thinking skills.

(v) A significant number (47.42%) display moderate creative thinking skills, with 24.86 percent demonstrating good creative thinking abilities, and 27.72 percent showing poor skills.

The table also shows that college students exhibiting moderate social skills constitute the largest percentage (41.87%) in Mizoram, while 28.49 percent have good social skills and 29.64 percent display poor social skills.

With respect to the components under ***social skills:***

(i) As many as 43.79 percent of college students show moderate empathy skills, with 26 percent displaying good empathy and 30.21 percent having poor empathy.

(ii) As few as 38.81 percent of college students possess moderate interpersonal relationship skills, while 32.89 percent possess good interpersonal relationship skills and 28.3 percent demonstrate poor interpersonal relationships skills.

(iii) Only 38.62 percent of college students exhibit moderate effective communication skills, with 31.36 percent showing good communication skills, and 30.02 percent having poor effective communication skills.

Looking at table 4.9, it can also be seen that college students showing moderate emotional skills constitute the highest percentage (39.39%) but only by a little, while 33.27 percent possess good emotional skills and 27.34 percent have poor emotional skills.

With respect to the components under ***emotional skills:***

(i) The largest portion (43.79%) of college students demonstrate moderate coping with emotion skills, with 28.68 percent displaying good coping with emotion skills and 27.53 percent having poor coping skills.

(ii) The highest percentage (45.89%) of college students exhibit moderate coping with stress skills, while 23.71 percent demonstrate good coping with stress skills, and 30.4 percent displaying poor coping with stress skills.

4.3.0 Assessment of the level of cognitive abilities of college students in Mizoram

To evaluate the cognitive abilities of college students in Mizoram, the researcher utilized the Raven's Standard Progressive Matrices test (1993) created by John C. Raven. The investigator established specific norms tailored to the current population under investigation.

The raw scores of all 523 college students were transformed into z-score. Based on the range of z-score, the cognitive abilities were classified into 7 levels. These levels were further combined and classified into 3 categories for interpretation of the present study as depicted in the following table no. 4.10.

Table 4.10

Norms for interpretation of the levels of cognitive abilities

Sl. No.	Range of z-Score	Levels of Cognitive Abilities	Interpretation
1	+2.01 and above	Extremely high cognitive abilities	High cognitive abilities
	+1.26 to +2.00	High cognitive abilities	
2	+0.51 to +1.25	Above average cognitive abilities	Average cognitive abilities
	-0.50 to +0.50	Average cognitive abilities	
	-1.25 to -0.51	Below average cognitive abilities	
3	-2.00 to -1.26	Low cognitive abilities	Low cognitive abilities
	-2.01 and below	Extremely low cognitive abilities	

Based on the above norms, the cognitive abilities of college students in Mizoram were divided into three levels as depicted in the following table 4.11

Table 4.11

Level of cognitive abilities of college students in Mizoram

Component	N	Mean	SD	Good	Average	Poor
Cognitive Abilities	523	47.28	7.82	176 (33.65%)	229 (43.79%)	118 (22.56%)

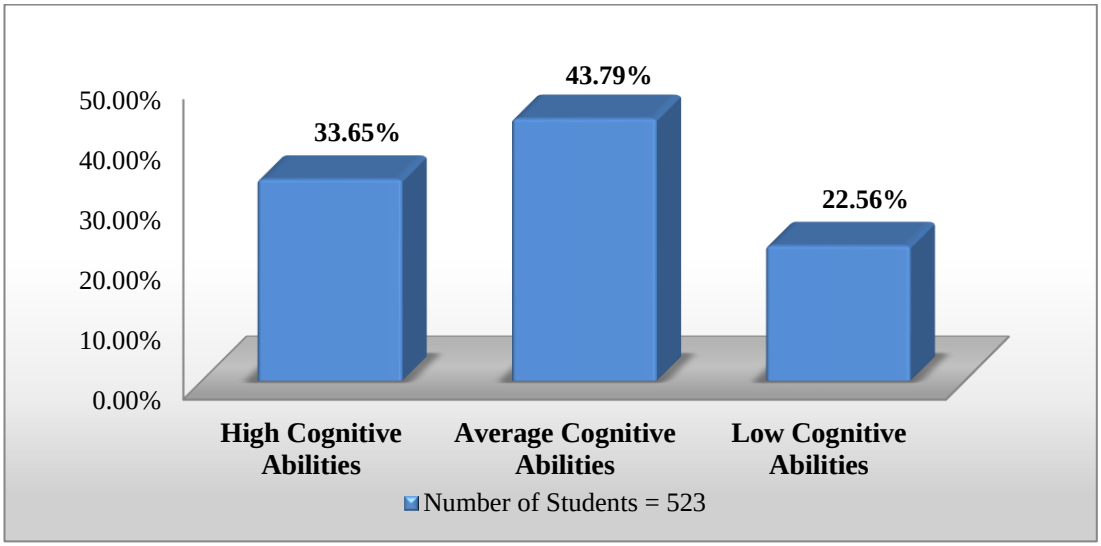

Figure 4.3*: Level of cognitive abilities of college students in Mizoram*

Table No. 4.11 shows college students possessing average cognitive abilities form the highest percentage (43.79%) in Mizoram. It can be seen that 33.65 percent of college students display high cognitive abilities and 22.56 percent of the students exhibit low cognitive abilities. The mean score of the cognitive abilities of college students in Mizoram is 47.28, with a corresponding standard deviation of 7.82.

4.4.0 Comparison of the different components of life skills and cognitive abilities of college students with reference to their gender.

The study examined the life skills and cognitive abilities of college students, considering their gender as a factor. To do this, the researcher calculated the mean and standard deviation of the scores and conducted a 't' test to assess differences in the means. The results of this analysis are presented in the tables provided.

A. Difference in the life skills of college students with reference to gender.

Hypothesis no. 1 states that there is no significant difference in the life skills of college students with reference to gender.

Table 4.12 shows a comparison in the life skills between male and female college students.

Table 4.12

Difference in the life skills of college students in Mizoram with reference to gender

Groups	Number	Mean	SD	MD	t- value	Sig level
Male students	230	255.52	21.666	4.355	2.299	.05
Female students	293	251.17	21.293			

The following analysis is derived from the comparative statistic.

Analysis of the data from table no - 4.12 reveals that the 't' value indicating the significance of the difference in life skills between male and female college students is 2.299. As the calculated 't' value exceeds the criterion 't' value, it can be concluded that there is a noteworthy difference in the life skills of college students concerning gender. Consequently, the null hypothesis (No. 1) suggesting no significant difference in the life skills of college students based on gender is rejected, given that the two groups exhibited substantial differences at a confidence level of 0.05. A comparison of their mean scores demonstrates that male respondents have higher mean scores than their female counterparts, indicating that male college students in Mizoram possess superior life skills to female college students.

B. Difference in the thinking skills of college students with reference to gender.

Hypothesis no. 2 states that there is no significant difference in the thinking skills of college students with reference to gender.

Table 4.13 shows a comparison in the thinking skills between male and female college students.

Table 4.13

Difference in the thinking skills of college students in Mizoram with reference to gender

Groups	Number	Mean	SD	MD	t- value	Sig level
Male students	230	138.40	12.481	4.036	3.629	.01
Female students	293	134.37	12.804			

The following analysis is derived from the comparative statistic.

Table no - 4.13 reveals a 't' value of 3.629, indicating a significant difference in the thinking skills of male and female college students. Since the calculated 't' value exceeds the criterion 't' value, it is concluded that there is a substantial difference in thinking skills among college students concerning gender. Consequently, the null hypothesis (No. 2) suggesting no significant difference in thinking skills based on gender is rejected, as the two groups exhibited significant differences at a confidence level of 0.01. A comparison of mean scores shows that male respondents have higher mean scores than their female counterparts, indicating that male college students in Mizoram demonstrate superior thinking skills compared to female college students.

C. Difference in the social skills of college students with reference to gender.

Hypothesis no. 3 states that there is no significant difference in the social skills of college students with reference to gender.

Table 4.14 shows a comparison in the social skills between male and female college students.

Table 4.14

Difference in the social skills of college students in Mizoram with reference to gender

Groups	Number	Mean	SD	MD	t- value	Sig level
Male students	230	91.70	9.258	.710	.901	NS
Female students	293	92.41	8.554			

The following analysis is derived from the comparative statistic.

Table no - 4.14 reveals that the 't' value representing the significance of the difference in social skills between male and female college students is .901. Since the calculated 't' value is lower than the critical 't' values at the 0.01 and 0.05 significance levels, it can be concluded that there is no substantial difference in the social skills of college students concerning gender. Consequently, the null hypothesis (No. 3) asserting that there is no significant difference in the social skills of college students based on gender is accepted, as the two groups do not exhibit significant differences at the 0.01 and 0.05 levels of confidence.

D. Difference in the emotional skills of college students with reference to gender.

Hypothesis no. 4 states that there is no significant difference in the emotional skills of college students with reference to gender.

Table 4.15 shows a comparison in the emotional skills between male and female college students.

Table 4.15

Difference in the emotional skills of college students in Mizoram with reference to gender

Groups	Number	Mean	SD	MD	t- value	Sig level
Male students	230	25.42	3.915	1.029	2.826	.01
Female students	293	24.39	4.396			

The following analysis is derived from the comparative statistic.

Upon examining the findings presented in table no - 4.15, it becomes evident that the 't' value, which assesses the significance of the difference in emotional skills between male and female college students, is recorded as 2.826. Given that this calculated 't' value exceeds the established criterion 't' value, it can be reasonably concluded that a significant difference exists in the emotional skills of college students based on gender. Consequently, the null hypothesis (No. 4), which posits no significant difference in emotional skills between college students of different genders, must be rejected. This rejection is justified by the significant divergence observed at the .01 level of confidence. An analysis of their mean scores further confirms this distinction, as male students exhibit higher mean scores compared to their female counterparts. The outcome suggests that, in the context of Mizoram, male college students possess superior emotional skills in comparison to their female peers.

E. Difference in the cognitive abilities of college students with reference to gender.

Hypothesis no. 5 states that there is no significant difference in the cognitive abilities of college students with reference to gender.

Table 4.16 shows a comparison in the cognitive abilities between male and female college students.

Table 4.16

Difference in the cognitive abilities of college students in Mizoram with reference to gender

Groups	Number	Mean	SD	MD	t- value	Sig level
Male students	230	47.85	7.952	1.008	1.459	NS
Female students	293	46.84	7.706			

The following analysis is derived from the comparative statistic.

Table no - 4.16 provides information about the 't' value, which assesses the significance of the difference in cognitive abilities between male and female college students. The recorded 't' value in this context is 1.459. Analysing this value, we can determine that it falls below the established criterion 't' values at the 0.01 and 0.05 levels. As a result, it can be reasonably concluded that there is no significant difference in the cognitive abilities of college students based on their gender. Consequently, the null hypothesis (No. 5), which posits no significant difference in cognitive abilities between college students of different genders, is accepted. This acceptance is based on the observation that the two groups do not exhibit a significant difference at the .01 and .05 levels of confidence.

4.5.0 Comparison of the different components of life skills and cognitive abilities of college students with reference to their stream of study.

The study involved a comparison of college students' life skills and cognitive abilities based on their stream of study. This analysis was conducted by calculating the mean and standard deviation of their scores. Subsequently, a 't' test was applied to assess the differences in means, and the results are presented in the accompanying tables.

A. Difference in the life skills between science and commerce college students.

Hypothesis no. 6 states that there is no significant difference in the life skills between science and commerce college students.

Table 4.17 shows a comparison in the life skills between science and commerce college students.

Table 4.17

Difference in the life skills between science and commerce college students

Groups	Number	Mean	SD	MD	t- value	Sig level
Science students	168	255.75	21.091	4.499	2.003	.05
Commerce students	171	251.25	20.240			

The following analysis is derived from the comparative statistic.

An examination of the result vide table no - 4.17 indicates that the 't' value, used to assess the difference in life skills between science and commerce college students, is 2.003. Given that this calculated 't' value surpasses the critical 't' value, it can be concluded that there exists a significant difference in life skills between these two groups of students. Consequently, the null hypothesis (No. 6), which posits no significant difference in life skills between science and commerce college students, is rejected. This rejection is based on the significant difference observed at a confidence level of 0.05. Notably, the mean score comparison favours science students, as they exhibit higher mean scores in life skills compared to commerce students. Therefore, the results suggest that science college students in Mizoram possess superior life skills compared to their counterparts in commerce.

B. Difference in the life skills between science and arts college students.

Hypothesis no. 7 states that there is no significant difference in the life skills between science and arts college students.

Table 4.18 shows a comparison in the life skills between science and arts college students.

Table 4.18

Difference in the life skills between science and arts college students

Groups	Number	Mean	SD	MD	t- value	Sig level
Science students	168	255.75	21.091	3.402	1.449	NS
Arts students	184	252.35	22.968			

The following analysis is derived from the comparative statistic.

Analysis of table no - 4.18 reveals that the 't' value, used to assess the difference in life skills between science and arts college students, is 1.449. It's important to note that this calculated 't' value is less than the critical 't' values at the 0.01 and 0.05 levels of significance. Consequently, it can be concluded that there is no significant difference in life skills between science and arts college students. This conclusion leads to the acceptance of the null hypothesis (No. 7), which posits no significant difference in life skills between these two groups of students. The evidence suggests that the two groups do not differ significantly in terms of their life skills at both the 0.01 and 0.05 levels of confidence.

C. Difference in the life skills between commerce and arts college students.

Hypothesis no. 8 states that there is no significant difference in the life skills between commerce and arts college students.

Table 4.19 shows a comparison in the life skills between commerce and arts college students.

Table 4.19

Difference in the life skills between commerce and arts college students

Groups	Number	Mean	SD	MD	t- value	Sig level
Commerce students	171	251.25	20.240	1.096	.478	NS
Arts students	184	252.35	22.968			

The following analysis is derived from the comparative statistic.

Table no - 4.19 indicates that the 't' value, which assesses the difference in life skills between commerce and arts college students, is .478. It's important to note that this calculated 't' value is less than the critical 't' values at the 0.01 and 0.05 levels of significance. Consequently, it can be concluded that there is no significant difference in life skills between commerce and arts college students. This conclusion leads to the acceptance of the null hypothesis (No. 8), which posits no significant difference in life skills between these two groups of students. The evidence suggests that the two groups do not differ significantly in terms of their life skills at both the 0.01 and 0.05 levels of confidence.

D. Difference in the thinking skills between science and commerce college students.

Hypothesis no. 9 states that there is no significant difference in the thinking skills between science and commerce college students.

Table 4.20 shows a comparison in the thinking skills between science and commerce college students.

Table 4.20

Difference in the thinking skills between science and commerce college students

Groups	Number	Mean	SD	MD	t- value	Sig level
Science students	168	138.52	12.295	3.752	2.810	.01
Commerce students	171	134.77	12.285			

The following analysis is derived from the comparative statistic.

An examination of the result vide table no - 4.20 reveals that the 't' value, which assesses the significance of the difference in thinking skills between science and commerce college students, is calculated to be 2.810. It's important to note that this calculated 't' value exceeds the critical 't' value, indicating statistical significance. Consequently, it can be concluded that there is indeed a significant difference in thinking skills between science and commerce college students in Mizoram. This conclusion leads to the rejection of the null hypothesis (No. 9), which initially assumed no significant difference in thinking skills between these two groups of students. The evidence suggests that the two groups significantly differ in their thinking skills, with science students outperforming commerce students. The results highlight that science college students exhibit superior thinking skills compared to their counterparts in commerce colleges in Mizoram.

E. Difference in the thinking skills between science and arts college students.

Hypothesis no. 10 states that there is no significant difference in the thinking skills between science and arts college students.

Table 4.21 shows a comparison in the thinking skills between science and arts college students.

Table 4.21

Difference in the thinking skills between science and arts college students

Groups	Number	Mean	SD	MD	t- value	Sig level
Science students	168	138.52	12.295	3.279	2.386	.05
Arts students	184	135.24	13.495			

The following analysis is derived from the comparative statistic.

Analysis of the data presented in table no - 4.21 indicates that the 't' value, used to assess the significance of the difference in thinking skills between science and arts college students, is calculated to be 2.386. Notably, this calculated 't' value surpasses the critical 't' value at the 0.05 significance level, signifying statistical significance. Consequently, it can be inferred that there exists a significant difference in thinking skills between science and arts college students in Mizoram. This conclusion leads to the rejection of the null hypothesis (No. 10), which initially assumed no significant difference in thinking skills between these two groups of students. The evidence suggests that the two groups significantly differ in their thinking skills, with science students outperforming arts students. The results highlight that science college students possess superior thinking skills compared to their counterparts in arts colleges in Mizoram.

F. Difference in the thinking skills between commerce and arts college students.

Hypothesis no. 11 states that there is no significant difference in the thinking skills between commerce and arts college students.

Table 4.22 shows a comparison in the thinking skills between commerce and arts college students.

Table 4.22

Difference in the thinking skills between commerce and arts college students

Groups	Number	Mean	SD	MD	t- value	Sig level
Commerce students	171	134.77	12.285	.473	.345	NS
Arts students	184	135.24	13.495			

The following analysis is derived from the comparative statistic.

Upon reviewing the data in table no 4.22, it is evident that the 't' value, which assesses the significance of the difference in thinking skills between commerce and arts college students, is calculated to be .345. It is important to note that this calculated 't' value falls below the critical 't' values at both the 0.01 and 0.05 significance levels. Consequently, the conclusion can be drawn that there is no significant difference in thinking skills between commerce and arts college students. As a result, the null hypothesis (No. 11), which posited that there is no significant difference in thinking skills between these two groups, is accepted. The evidence suggests that the two groups do not exhibit a significant difference in their thinking skills at the .01 and .05 levels of confidence.

G. Difference in the social skills between science and commerce college students.

Hypothesis no. 12 states that there is no significant difference in the social skills between science and commerce college students.

Table 4.23 shows a comparison in the social skills between science and commerce college students.

Table 4.23

Difference in the social skills between science and commerce college students

Groups	Number	Mean	SD	MD	t- value	Sig level
Science students	168	92.45	8.771	.563	.598	NS
Commerce students	171	91.89	8.572			

The following analysis is derived from the comparative statistic.

A perusal of the result vide table no - 4.23 reveals that the 't' value, which assesses the significance of the difference in social skills between science and commerce college students, is calculated to be .598. Notably, this calculated 't' value is lower than the critical 't' value. Consequently, it can be inferred that there is no significant difference in social skills between science and commerce college students. As a result, the null hypothesis (No. 12), which posits that there is no significant difference in social skills between these two groups, is accepted. The evidence

indicates that the two groups do not exhibit a significant difference in their social skills at the .01 and .05 levels of confidence.

H. Difference in the social skills between science and arts college students.

Hypothesis no. 13 states that there is no significant difference in the social skills between science and arts college students.

Table 4.24 shows a comparison in the social skills between science and arts college students.

Table 4.24

Difference in the social skills between science and arts college students

Groups	Number	Mean	SD	MD	t- value	Sig level
Science students	168	92.45	8.771	.496	.516	NS
Arts students	184	91.96	9.259			

The following analysis is derived from the comparative statistic.

Based on the data presented in table no - 4.24, it is evident that the 't' value, which assesses the significance of the difference in social skills between science and arts college students, is calculated to be .516. Importantly, this calculated 't' value is lower than the critical 't' value at both the 0.01 and 0.05 significance levels. Therefore, it can be concluded that there is no statistically significant difference in the social skills between science and arts college students. Consequently, the null hypothesis (No. 13), which posits that there is no significant difference in social skills between these two groups, is accepted. The evidence indicates that the two groups do not exhibit a significant difference in their social skills at the .01 and .05 levels of confidence.

I. Difference in the social skills between commerce and arts college students.

Hypothesis no. 14 states that there is no significant difference in the social skills between commerce and arts college students.

Table 4.25 shows a comparison in the social skills between commerce and arts college students.

Table 4.25

Difference in the social skills between commerce and arts college students

Groups	Number	Mean	SD	MD	t- value	Sig level
Commerce students	171	91.89	8.572	.068	.071	NS
Arts students	184	91.96	9.259			

The following analysis is derived from the comparative statistic.

A look at the result vide table no - 4.25 indicates that the 't' value, which assesses the significance of the difference in social skills between commerce and arts college students, is calculated to be .071. It is noteworthy that this calculated 't' value is lower than the critical 't' values at both the 0.01 and 0.05 significance levels. Consequently, it can be inferred that there is no statistically significant difference in the social skills between commerce and arts college students. As a result, the null hypothesis (No. 14), which posits that there is no significant difference in social skills between these two groups, is accepted. The evidence suggests that the two groups do not exhibit a significant difference in their social skills at the .01 and .05 levels of confidence.

J. Difference in the emotional skills between science and commerce college students.

Hypothesis no. 15 states that there is no significant difference in the emotional skills between science and commerce college students.

Table 4.26 shows a comparison in the emotional skills between science and commerce college students.

Table 4.26

Difference in the emotional skills between science and commerce college students

Groups	Number	Mean	SD	MD	t- value	Sig level
Science students	168	24.77	4.162	.183	.417	NS
Commerce students	171	24.59	3.915			

The following analysis is derived from the comparative statistic.

Table no - 4.26 provides information indicating that the 't' value, which assesses the significance of the difference in emotional skills between science and

commerce college students, is calculated to be .417. Importantly, the calculated 't' value is lower than the critical 't' value, both at the 0.01 and 0.05 significance levels. As a result, it can be concluded that there is no statistically significant difference in the emotional skills between science and commerce college students. Consequently, the null hypothesis (No. 15), which posits that there is no significant difference in emotional skills between these two groups, is accepted. This indicates that the two groups do not exhibit a significant difference in their emotional skills at the .01 and .05 levels of confidence.

K. Difference in the emotional skills between science and arts college students.

Hypothesis no. 16 states that there is no significant difference in the emotional skills between science and arts college students.

Table 4.27 shows a comparison in the emotional skills between science and arts college students.

Table 4.27

Difference in the emotional skills between science and arts college students

Groups	Number	Mean	SD	MD	t- value	Sig level
Science students	168	24.77	4.162	.373	.804	NS
Arts students	184	25.15	4.535			

The following analysis is derived from the comparative statistic.

Table no - 4.27 presents data indicating that the 't' value, which assesses the significance of the difference in emotional skills between science and arts college students, is calculated to be .804. Importantly, the calculated 't' value is lower than the critical 't' value, both at the 0.01 and 0.05 significance levels. As a result, it can be concluded that there is no statistically significant difference in the emotional skills between science and arts college students. Consequently, the null hypothesis (No. 16), which assumes that there is no significant difference in emotional skills between these two groups, is accepted. This suggests that the two groups do not exhibit a significant difference in their emotional skills at the .01 and .05 levels of confidence.

L. Difference in the emotional skills between commerce and arts college students.

Hypothesis no. 17 states that there is no significant difference in the emotional skills between commerce and arts college students.

Table 4.28 shows a comparison in the emotional skills between commerce and arts college students.

Table 4.28

Difference in the emotional skills between commerce and arts college students

Groups	Number	Mean	SD	MD	t- value	Sig level
Commerce students	171	24.59	3.915	.556	1.239	NS
Arts students	184	25.15	4.535			

The following analysis is derived from the comparative statistic.

A look at the result vide table no - 4.28 indicates that the 't' value, which assesses the significance of the difference in emotional skills between commerce and arts college students, stands at 1.239. Importantly, this calculated 't' value is lower than the critical 't' value, both at the 0.01 and 0.05 significance levels. Consequently, it can be deduced that there is no statistically significant difference in the emotional skills between commerce and arts college students. Therefore, the null hypothesis (No. 17), which posits that there is no significant difference in emotional skills between these two groups, is accepted. This implies that the two groups do not exhibit a significant difference in their emotional skills at the .01 and .05 levels of confidence.

M. Difference in the cognitive abilities between science and commerce college students.

Hypothesis no. 18 states that there is no significant difference in the cognitive abilities between science and commerce college students.

Table 4.29 shows a comparison in the cognitive abilities between science and commerce college students.

Table 4.29

Difference in the cognitive abilities between science and commerce college students

Groups	Number	Mean	SD	MD	t- value	Sig level
Science students	168	49.99	5.782	3.415	4.647	.01
Commerce students	171	46.57	7.637			

The following analysis is derived from the comparative statistic.

Table no - 4.29 presents data indicating that the 't' value, which assesses the significance of the difference in cognitive abilities between science and commerce college students, is 4.647. Importantly, this calculated 't' value exceeds the critical 't' value, signifying a significant difference in cognitive abilities between these two groups. Consequently, the null hypothesis (No. 18), which posits that there is no significant difference in cognitive abilities between science and commerce college students, is rejected at a 0.01 level of confidence. This rejection implies that the two groups exhibit a notable difference in cognitive abilities, favoring science students, as their mean score surpasses that of commerce students. The outcome suggests that science college students in Mizoram possess superior cognitive abilities compared to their commerce counterparts.

N. Difference in the cognitive abilities between science and arts college students.

Hypothesis no. 19 states that there is no significant difference in the cognitive abilities between science and arts college students.

Table 4.30 shows a comparison in the cognitive abilities between science and arts college students.

Table 4.30

Difference in the cognitive abilities between science and arts college students

Groups	Number	Mean	SD	MD	t- value	Sig level
Science students	168	49.99	5.782	4.515	5.685	.01
Arts students	184	45.47	8.912			

The following analysis is derived from the comparative statistic.

Table no - 4.30 presents data indicating that the 't' value, which assesses the significance of the difference in cognitive abilities between science and arts college students, is 5.685. Importantly, this calculated 't' value exceeds the critical 't' value at a 0.01 level of significance, indicating a substantial difference in cognitive abilities between the two groups. Consequently, the null hypothesis (No. 19), which posits that there is no significant difference in cognitive abilities between science and arts college students, is rejected. This rejection implies that the two groups exhibit a notable difference in cognitive abilities, favoring science students, as their mean score surpasses that of arts students. The result indicates that science college students in Mizoram possess superior cognitive abilities compared to their arts college counterparts.

O. Difference in the cognitive abilities between commerce and arts college students.

Hypothesis no. 20 states that there is no significant difference in the cognitive abilities between commerce and arts college students.

Table 4.31 shows a comparison in the cognitive abilities between commerce and arts college students.

Table 4.31

Difference in the cognitive abilities between commerce and arts college students

Groups	Number	Mean	SD	MD	t- value	Sig level
Commerce students	171	46.57	7.637	1.100	1.252	NS
Arts students	184	45.47	8.912			

The following analysis is derived from the comparative statistic.

A look at the result vide table No - 4.31 indicates that the 't' value, which assesses the significance of the difference in cognitive abilities between commerce and arts college students, is calculated to be 1.252. It's important to note that this calculated 't' value falls below the critical 't' values at both the 0.01 and 0.05 significance levels. This suggests that there is no significant difference in the cognitive abilities between commerce and arts college students. Consequently, the null hypothesis (No. 20), which posits that there is no significant difference in cognitive abilities between these two

groups, is accepted. This means that the data does not provide enough evidence to suggest a significant disparity in cognitive abilities between commerce and arts college students at the 0.01 and 0.05 levels of confidence.

4.6.0 Comparison of the different components of life skills and cognitive abilities of college students with reference to their father's working status.

The life skills and cognitive abilities of college students were compared with reference to their father's working status. To conduct this analysis, the process involved obtaining the mean and standard deviation of the scores. Subsequently, the mean differences were assessed using a 't' test. The results and specifics of this analysis can be found in the tables provided.

A. Difference in the life skills of college students with reference to father's working status.

Hypothesis no. 21 states that there is no significant difference in the life skills of college students with reference to father's working status.

Table 4.32 shows a comparison of life skills between working fathers and non-working fathers of college students.

Table 4.32

Difference in the life skills of college students in Mizoram with reference to father's working status

Groups	Number	Mean	SD	MD	t- value	Sig level
Working Fathers	329	254.75	22.107	4.506	2.372	.05
Non – Working Fathers	194	250.25	20.302			

The following analysis is derived from the comparative statistic.

Table no - 4.32 reveals that the 't' value for assessing the difference in life skills between college students with working fathers and those with non-working fathers is 2.372. As the calculated 't' value exceeds the criterion 't' value, it can be concluded that there is a significant distinction in the life skills of college students based on their fathers' working status. Consequently, the null hypothesis (No. 21) suggesting no substantial difference in the life skills of college students concerning their fathers'

working status is rejected, given the significant difference observed at a confidence level of 0.05. An analysis of their mean scores further supports this finding, indicating that students with working fathers have higher mean scores in life skills compared to students with non-working fathers. Therefore, the results suggest that students with working fathers tend to possess superior life skills than their counterparts with non-working fathers.

B. Difference in the thinking skills of college students with reference to father's working status.

Hypothesis no. 22 states that there is no significant difference in the thinking skills of college students with reference to father's working status.

Table 4.33 shows a comparison of thinking skills between working fathers and non-working fathers of college students.

Table 4.33

Difference in the thinking skills of college students in Mizoram with reference to father's working status

Groups	Number	Mean	SD	MD	t- value	Sig level
Working Fathers	329	136.70	13.146	1.490	1.311	NS
Non – Working Fathers	194	135.21	12.192			

The following analysis is derived from the comparative statistic.

Table no - 4.33 reveals that the 't' value, which assesses the significance of the difference in thinking skills between college students with working fathers and those with non-working fathers, is 1.311. Given that the calculated 't' value is lower than the criterion 't' values at the 0.01 and 0.05 significance levels, it can be concluded that there is no substantial difference in the thinking skills of college students based on their father's working status. Consequently, the null hypothesis (No. 22), which posits no significant difference in the thinking skills of college students concerning their father's working status, is accepted since the two groups do not exhibit significant differences at the 0.01 and 0.05 confidence levels.

C. Difference in the social skills of college students with reference to father's working status.

Hypothesis no. 23 states that there is no significant difference in the social skills of college students with reference to father's working status.

Table 4.34 shows a comparison of social skills between working fathers and non-working fathers of college students.

Table 4.34

Difference in the social skills of college students in Mizoram with reference to father's working status

Groups	Number	Mean	SD	MD	t- value	Sig level
Working Fathers	329	93.02	8.892	2.492	3.155	.01
Non – Working Fathers	194	90.53	8.629			

The following analysis is derived from the comparative statistic.

A perusal of table no - 4.34 reveals that the 't' value, which assesses the significance of the difference in social skills between college students with working fathers and those with non-working fathers, is 3.155. Given that the calculated 't' value is higher than the criterion 't' value, it can be concluded that there is a significant difference in the social skills of college students based on their father's working status. Consequently, the null hypothesis (No. 23), which posits no significant difference in the life skills of college students concerning their father's working status, is rejected since the two groups exhibited a significant difference at the 0.01 confidence level. A comparison of their mean scores shows that this difference favors students with working fathers, as their mean score is higher than that of students with non-working fathers. The result suggests that students with working fathers possess better social skills than students with non-working fathers.

D. Difference in the emotional skills of college students with reference to father's working status.

Hypothesis no. 24 states that there is no significant difference in the emotional skills of college students with reference to father's working status.

Table 4.35 shows a comparison of emotional skills between working fathers and non-working fathers of college students.

Table 4.35

Difference in the emotional skills of college students in Mizoram with reference to father's working status

Groups	Number	Mean	SD	MD	t- value	Sig level
Working Fathers	329	25.04	4.415	.524	1.423	NS
Non – Working Fathers	194	24.52	3.851			

The following analysis is derived from the comparative statistic.

An examination of the result vide table no - 4.35 shows that the 't' value, which assesses the significance of the difference in emotional skills between college students with working fathers and those with non-working fathers, is 1.423. Given that the calculated 't' value is lower than the criterion 't' values at both the 0.01 and 0.05 levels of significance, it can be inferred that there is no significant difference in the emotional skills of college students based on their father's working status. Consequently, the null hypothesis (No. 24), which posits no significant difference in the emotional skills of college students concerning their father's working status, is accepted since the two groups do not exhibit significant differences at the 0.01 and 0.05 levels of confidence.

E. Difference in the cognitive abilities of college students with reference to father's working status.

Hypothesis no. 25 states that there is no significant difference in the cognitive abilities of college students with reference to father's working status.

Table 4.36 shows a comparison of cognitive abilities between working fathers and non-working fathers of college students.

Table 4.36

Difference in the cognitive abilities of college students in Mizoram with reference to father's working status

Groups	Number	Mean	SD	MD	t- value	Sig level
Working Fathers	329	47.45	7.326	.458	.620	NS
Non – Working Fathers	194	46.99	8.615			

The following analysis is derived from the comparative statistic.

A glance at the result vide table No - 4.36 reveals that the 't' value, which assesses the significance of the difference in cognitive abilities between college students with working fathers and those with non-working fathers, is .620. Given that the calculated 't' value falls below the criterion 't' values at both the 0.01 and 0.05 levels of significance, it can be concluded that there is no significant difference in the cognitive abilities of college students concerning their father's working status. Consequently, the null hypothesis (No. 25), which posits no significant difference in the cognitive abilities of college students based on their father's working status, is accepted since the two groups do not exhibit significant differences at the 0.01 and 0.05 levels of confidence.

4.7.0 Comparison of the different components of life skills and cognitive abilities of college students with reference to their father's level of educational qualification

The life skills and cognitive abilities of college students were compared with reference to their father's educational qualification. To conduct this analysis, the researcher calculated the mean and standard deviation of the scores. 't' test was then applied to assess the differences in means. The results of this analysis are summarized in the tables provided in the study.

A. Difference in the life skills between college students with under-matric fathers and graduate fathers.

Hypothesis no. 26 states that there is no significant difference in the life skills between college students with under-matric fathers and graduate fathers.

Table 4.37 shows a comparison of life skills between college students with under-matric fathers and graduate fathers.

Table 4.37

Difference in the life skills between college students with under-matric fathers and graduate fathers

Groups	Number	Mean	SD	MD	t- value	Sig level
Under-matric Fathers	267	250.49	18.930	3.801	1.825	NS
Graduate Fathers	184	254.29	23.481			

The following analysis is derived from the comparative statistic.

Table no - 4.37 provides clear evidence that the 't' value, which signifies the significance of the difference in life skills between college students with fathers who have under-matric education and those with graduate fathers, is 1.825. The calculated 't' value is lower than the critical 't' values at both the 0.01 and 0.05 significance levels. Therefore, it can be concluded that there is no statistically significant difference in the life skills of college students based on their fathers' education levels. Consequently, the null hypothesis (No. 26), which posits that there is no significant difference in life skills between college students with under-matric fathers and graduate fathers, is accepted. This indicates that the two groups do not exhibit a significant difference in life skills at the 0.01 and 0.05 levels of confidence.

B. Difference in the life skills between college students with graduate fathers and post-graduate fathers.

Hypothesis no. 27 states that there is no significant difference in the life skills between college students with graduate fathers and post-graduate fathers.

Table 4.38 shows a comparison of life skills between college students with graduate fathers and post-graduate fathers.

Table 4.38

Difference in the life skills between college students with graduate fathers and post-graduate fathers

Groups	Number	Mean	SD	MD	t- value	Sig level
Graduate Fathers	184	254.29	23.481	5.337	1.609	NS
Post-graduate Fathers	72	259.63	24.018			

The following analysis is derived from the comparative statistic.

A look at the result vide table No - 4.38 reveals that the 't' value, which assesses the significance of the difference in life skills between college students with graduate fathers and those with post-graduate fathers, is 1.609. However, it is important to note that this calculated 't' value falls below the critical 't' values at both the 0.01 and 0.05 significance levels. As a result, it can be reasonably concluded that there is no statistically significant distinction in life skills between college students with graduate

fathers and those with post-graduate fathers. Consequently, the null hypothesis (No. 27), which posits that there is no significant difference in life skills between these two groups of students, is accepted. This acceptance implies that the two groups do not exhibit a significant difference in life skills at the 0.01 and 0.05 levels of confidence.

C. Difference in the life skills between college students with under-matric fathers and post-graduate fathers.

Hypothesis no. 28 states that there is no significant difference in the life skills between college students with under-matric fathers and post-graduate fathers.

Table 4.39 shows a comparison of life skills between college students with under-matric fathers and post-graduate fathers.

Table 4.39

Difference in the life skills between college students with under-matric fathers and post-graduate fathers

Groups	Number	Mean	SD	MD	t- value	Sig level
Under-matric Fathers	267	250.49	18.930	9.138	2.988	.01
Post-graduate Fathers	72	259.63	24.018			

The following analysis is derived from the comparative statistic.

An examination of the findings presented in table no - 4.39 reveals that the 't' value, which assesses the significance of the difference in life skills between college students with under-matric fathers and those with post-graduate fathers, is 2.988. Importantly, this calculated 't' value surpasses the critical 't' value at the 0.01 significance level. Consequently, it can be reasonably concluded that there exists a significant difference in the life skills between these two groups of college students. This finding leads to the rejection of the null hypothesis (No. 28), which posits that there is no significant difference in life skills between college students with under-matric fathers and those with post-graduate fathers, as the two groups demonstrated a significant difference at the 0.01 level of confidence. A closer look at their mean scores indicates that this difference favors college students with post-graduate fathers, as their mean score is higher than that of students with under-matric fathers. In summary, the

results suggest that students with post-graduate fathers possess superior life skills compared to students with under-matric fathers.

D. Difference in the thinking skills between college students with under-matric fathers and graduate fathers.

Hypothesis no. 29 states that there is no significant difference in the thinking skills between college students with under-matric fathers and graduate fathers.

Table 4.40 shows a comparison of thinking skills between college students with under-matric fathers and graduate fathers.

Table 4.40

Difference in the thinking skills between college students with under-matric fathers and graduate fathers

Groups	Number	Mean	SD	MD	t- value	Sig level
Under-matric Fathers	267	134.68	11.548	2.079	1.677	NS
Graduate Fathers	184	136.76	13.818			

The following analysis is derived from the comparative statistic.

A review of the data presented in table no - 4.40 reveals that the 't' value, which assesses the significance of the difference in thinking skills between college students with under-matric fathers and those with graduate fathers, is calculated to be 1.677. It is noteworthy that this calculated 't' value falls below the critical 't' values at both the 0.01 and 0.05 significance levels. Consequently, it can be reasonably concluded that there is no significant difference in the thinking skills between these two groups of college students. This finding leads to the acceptance of the null hypothesis (No. 29), which posits that there is no significant difference in thinking skills between college students with under-matric fathers and those with graduate fathers, as the two groups do not exhibit a significant difference at the 0.01 and 0.05 levels of confidence.

E. Difference in the thinking skills between college students with graduate fathers and post-graduate fathers.

Hypothesis no. 30 states that there is no significant difference in the thinking skills between college students with graduate fathers and post-graduate fathers.

Table 4.41 shows a comparison of thinking skills between college students with graduate fathers and post-graduate fathers.

Table 4.41

Difference in the thinking skills between college students with graduate fathers and post-graduate fathers

Groups	Number	Mean	SD	MD	t- value	Sig level
Graduate Fathers	184	136.76	13.818	3.225	1.680	NS
Post-graduate Fathers	72	139.99	13.804			

The following analysis is derived from the comparative statistic.

Upon reviewing the data in table no - 4.41, it becomes evident that the 't' value, which assesses the significance of the difference in thinking skills between college students with graduate fathers and those with post-graduate fathers, is recorded as 1.680. Importantly, this calculated 't' value falls below the critical 't' values at both the 0.01 and 0.05 significance levels. Consequently, it can be reasonably concluded that there is no significant difference in thinking skills between these two groups of college students. This leads to the acceptance of the null hypothesis (No. 30), which posits that there is no significant difference in thinking skills between college students with graduate fathers and those with post-graduate fathers, as the two groups do not exhibit a significant difference at the 0.01 and 0.05 levels of confidence.

F. Difference in the thinking skills between college students with under-matric fathers and post-graduate fathers.

Hypothesis no. 31 states that there is no significant difference in the thinking skills between college students with under-matric fathers and post-graduate fathers.

Table 4.42 shows a comparison of thinking skills between college students with under-matric fathers and post-graduate fathers.

Table 4.42

Difference in the thinking skills between college students with under-matric fathers and post-graduate fathers

Groups	Number	Mean	SD	MD	t- value	Sig level
Under-matric Fathers	267	134.68	11.548	5.304	2.991	.01
Post-graduate Fathers	72	139.99	13.804			

The following analysis is derived from the comparative statistic.

A glance at the result vide table no - 4.42 unveils that the 't' value, which measures the significance of the difference in thinking skills between college students with under-matric fathers and those with post-graduate fathers, stands at 2.991. Significantly, this calculated 't' value exceeds the critical 't' value at the 0.01 significance level. Consequently, it can be confidently asserted that there is indeed a substantial difference in thinking skills between these two groups of college students. As a result, the null hypothesis (No. 31), which posits no significant difference in thinking skills between college students with under-matric fathers and post-graduate fathers, is rejected. This rejection stems from the significant difference observed at the 0.01 level of confidence. Upon comparing their mean scores, it becomes evident that college students with post-graduate fathers outperform those with under-matric fathers in terms of thinking skills. This outcome strongly suggests that students with post-graduate fathers possess superior thinking skills compared to their counterparts with under-matric fathers.

G. Difference in the social skills between college students with under-matric fathers and graduate fathers.

Hypothesis no. 32 states that there is no significant difference in the social skills between college students with under-matric fathers and graduate fathers.

Table 4.43 shows a comparison of social skills between college students with under-matric fathers and graduate fathers.

Table 4.43

Difference in the social skills between college students with under-matric fathers and graduate fathers

Groups	Number	Mean	SD	MD	t- value	Sig level
Under-matric Fathers	267	91.17	8.030	1.447	1.693	NS
Graduate Fathers	184	92.62	9.488			

The following analysis is derived from the comparative statistic.

Analysis of table no - 4.43 reveals that the 't' value, which assesses the significance of the difference in social skills between college students with under-

matric fathers and those with graduate fathers, stands at 1.693. Notably, this calculated 't' value is lower than the critical 't' value at both the 0.01 and 0.05 significance levels. Consequently, it can be inferred that there is no substantial difference in the social skills of these two groups of college students. This conclusion leads to the acceptance of the null hypothesis (No. 32), which posits that there is no significant difference in social skills between college students with under-matric fathers and graduate fathers. The data suggests that these two groups do not exhibit significant differences in social skills at the 0.01 and 0.05 confidence levels.

H. Difference in the social skills between college students with graduate fathers and post-graduate fathers.

Hypothesis no. 33 states that there is no significant difference in the social skills between college students with graduate fathers and post-graduate fathers.

Table 4.44 shows a comparison of social skills between college students with graduate fathers and post-graduate fathers.

Table 4.44

Difference in the social skills between college students with graduate fathers and post-graduate fathers

Groups	Number	Mean	SD	MD	t- value	Sig level
Graduate Fathers	184	92.62	9.488	1.547	1.144	NS
Post-graduate Fathers	72	94.17	9.821			

The following analysis is derived from the comparative statistic.

A glance at the result vide table no - 4.44 shows that the 't' value representing the significance of the difference in social skills between college students with graduate fathers and those with post-graduate fathers is 1.144. It is noteworthy that this calculated 't' value falls below the critical 't' values at both the 0.01 and 0.05 significance levels. Consequently, it can be deduced that there is no substantial difference in the social skills between college students with graduate fathers and post-graduate fathers. This leads to the acceptance of the null hypothesis (No. 33), which posits that there is no significant difference in social skills between these two groups

of college students. The data suggests that these two groups do not exhibit significant differences in social skills at the 0.01 and 0.05 confidence levels.

I. Difference in the social skills between college students with under-matric fathers and post-graduate fathers.

Hypothesis no. 34 states that there is no significant difference in the social skills between college students with under-matric fathers and post-graduate fathers.

Table 4.45 shows a comparison of social skills between college students with under-matric fathers and post-graduate fathers.

Table 4.45

Difference in the social skills between college students with under-matric fathers and post-graduate fathers

Groups	Number	Mean	SD	MD	t- value	Sig level
Under-matric Fathers	267	91.17	8.030	2.994	2.381	.05
Post-graduate Fathers	72	94.17	9.821			

The following analysis is derived from the comparative statistic.

A review of the results in table no - 4.45 demonstrates that the 't' value, which signifies the significance of the difference in social skills between college students with under-matric fathers and those with post-graduate fathers, stands at 2.381. Notably, this calculated 't' value surpasses the established 't' value criterion at the 0.05 significance level. Consequently, it can be inferred that there exists a substantial difference in the social skills between college students with under-matric fathers and post-graduate fathers. As a result, the null hypothesis (No. 34), which posits that there is no significant difference in social skills between these two groups of college students, is rejected. This rejection is based on the evidence that the two groups indeed differ significantly at the 0.05 level of confidence. Further analysis, comparing their mean scores, supports the notion that this difference favors college students with post-graduate fathers, as their mean score exceeds that of students with under-matric fathers. These results suggest that students with post-graduate fathers tend to possess better social skills than their counterparts with under-matric fathers.

J. Difference in the emotional skills between college students with under-matric fathers and graduate fathers.

Hypothesis no. 35 states that there is no significant difference in the emotional skills between college students with under-matric fathers and graduate fathers.

Table 4.46 shows a comparison of emotional skills between college students with under-matric fathers and graduate fathers.

Table 4.46

Difference in the emotional skills between college students with under-matric fathers and graduate fathers

Groups	Number	Mean	SD	MD	t- value	Sig level
Under-matric Fathers	267	24.63	3.989	.275	.686	NS
Graduate Fathers	184	24.91	4.301			

The following analysis is derived from the comparative statistic.

Based on the information from table no - 4.46, it is evident that the 't' value representing the significance of the difference in emotional skills between college students with under-matric fathers and graduate fathers is .686. Importantly, this calculated 't' value falls below the established 't' value thresholds at the 0.01 and 0.05 significance levels. Consequently, it can be inferred that there exists no significant difference in the emotional skills between college students with under-matric fathers and those with graduate fathers. As a result, the null hypothesis (No. 35), which posits that there is no significant difference in emotional skills between these two groups of college students, is accepted. This acceptance is based on the evidence that the two groups do not exhibit significant differences in emotional skills at the .01 and .05 levels of confidence.

K. Difference in the emotional skills between college students with graduate fathers and post-graduate fathers.

Hypothesis no. 36 states that there is no significant difference in the emotional skills between college students with graduate fathers and post-graduate fathers.

Table 4.47 shows a comparison of emotional skills between college students with graduate fathers and post-graduate fathers.

Table 4.47

Difference in the emotional skills between college students with graduate fathers and post-graduate fathers

Groups	Number	Mean	SD	MD	t- value	Sig level
Graduate Fathers	184	24.91	4.301	.565	.871	NS
Post-graduate Fathers	72	25.47	4.794			

The following analysis is derived from the comparative statistic.

A perusal of the result vide table no - 4.47 shows that the 't' value, which assesses the significance of the difference in emotional skills between college students with graduate fathers and those with post-graduate fathers, is .871. Importantly, the calculated 't' value falls below the established 't' value thresholds at both the 0.01 and 0.05 significance levels. As a result, it can be reasonably concluded that there exists no significant difference in emotional skills between these two groups of college students. Consequently, the null hypothesis (No. 36), which posits that there is no significant difference in emotional skills between college students with graduate fathers and post-graduate fathers, is accepted. This acceptance is based on the evidence that the two groups do not exhibit significant differences in emotional skills at the .01 and .05 levels of confidence.

L. Difference in the emotional skills between college students with under-matric fathers and post-graduate fathers.

Hypothesis no. 37 states that there is no significant difference in the emotional skills between college students with under-matric fathers and post-graduate fathers.

Table 4.48 shows a comparison of emotional skills between college students with under-matric fathers and post-graduate fathers.

Table 4.48

Difference in the emotional skills between college students with under-matric fathers and post-graduate fathers

Groups	Number	Mean	SD	MD	t- value	Sig level
Under-matric Fathers	267	24.63	3.989	.839	1.364	NS
Post-graduate Fathers	72	25.47	4.794			

The following analysis is derived from the comparative statistic.

After analysing the data in table no - 4.48, it is evident that the 't' value, which assesses the significance of the difference in emotional skills between college students with under-matric fathers and those with post-graduate fathers, is calculated to be 1.364. Importantly, this calculated 't' value is lower than the critical 't' values established at both the 0.01 and 0.05 significance levels. As a result, it can be reasonably concluded that there exists no significant difference in emotional skills between these two groups of college students. Consequently, the null hypothesis (No. 37), which posits that there is no significant difference in emotional skills between college students with under-matric fathers and post-graduate fathers, is accepted. This acceptance is based on the evidence that the two groups do not exhibit significant differences in emotional skills at the .01 and .05 levels of confidence.

M. Difference in the cognitive abilities between college students with under-matric fathers and graduate fathers.

Hypothesis no. 38 states that there is no significant difference in the cognitive abilities between college students with under-matric fathers and graduate fathers.

Table 4.49 shows a comparison of cognitive abilities between college students with under-matric fathers and graduate fathers.

Table 4.49

Difference in the cognitive abilities between college students with under-matric fathers and graduate fathers

Groups	Number	Mean	SD	MD	t- value	Sig level
Under-matric Fathers	267	46.72	8.601	1.168	1.564	NS
Graduate Fathers	184	47.89	7.195			

The following analysis is derived from the comparative statistic.

The data presented in table no - 4.49 reveals that the 't' value, which assesses the significance of the difference in cognitive abilities between college students with under-matric fathers and those with graduate fathers, is calculated to be 1.564. It's important to note that this calculated 't' value is lower than the critical 't' values established at both the 0.01 and 0.05 significance levels. As a result, it can be

reasonably concluded that there exists no significant difference in cognitive abilities between these two groups of college students. Consequently, the null hypothesis (No. 38), which posits that there is no significant difference in cognitive abilities between college students with under-matric fathers and graduate fathers, is accepted. This acceptance is based on the evidence that the two groups do not exhibit significant differences in cognitive abilities at the .01 and .05 levels of confidence.

N. Difference in the cognitive abilities between college students with graduate fathers and post-graduate fathers.

Hypothesis no. 39 states that there is no significant difference in the cognitive abilities between college students with graduate fathers and post-graduate fathers.

Table 4.50 shows a comparison of cognitive abilities between college students with graduate fathers and post-graduate fathers.

Table 4.50

Difference in the cognitive abilities between college students with graduate fathers and post-graduate fathers

Groups	Number	Mean	SD	MD	t- value	Sig level
Graduate Fathers	184	47.89	7.195	.086	.096	NS
Post-graduate Fathers	72	47.81	6.085			

The following analysis is derived from the comparative statistic.

Table No - 4.50 shows that the 't' value, used to assess the significance of the difference in cognitive abilities between college students with graduate fathers and those with post-graduate fathers, is calculated to be .096. It's worth noting that this calculated 't' value is lower than the critical 't' values established at both the 0.01 and 0.05 significance levels. Consequently, it can be reasonably concluded that there exists no significant difference in cognitive abilities between these two groups of college students. Therefore, the null hypothesis (No. 39), which posits that there is no significant difference in cognitive abilities between college students with graduate fathers and post-graduate fathers, is accepted. This acceptance is based on the evidence that the two groups do not exhibit significant differences in cognitive abilities at the .01 and .05 levels of confidence.

O. Difference in the cognitive abilities between college students with under-matric fathers and post-graduate fathers.

Hypothesis no. 40 states that there is no significant difference in the cognitive abilities between college students with under-matric fathers and post-graduate fathers.

Table 4.51 shows a comparison of cognitive abilities between college students with under-matric fathers and post-graduate fathers.

Table 4.51

Difference in the cognitive abilities between college students with under-matric fathers and post-graduate fathers

Groups	Number	Mean	SD	MD	t- value	Sig level
Under-matric Fathers	267	46.72	8.601	1.083	1.217	NS
Post-graduate Fathers	72	47.81	6.085			

The following analysis is derived from the comparative statistic.

Looking at the result vide table No - 4.51 reveals that the 't' value, used to assess the significance of the difference in cognitive abilities between college students with under-matric fathers and those with post-graduate fathers, is calculated to be 1.217. Importantly, this calculated 't' value falls below the critical 't' values established at both the 0.01 and 0.05 significance levels. As a result, it can be reasonably concluded that there exists no significant difference in the cognitive abilities between these two groups of college students. Consequently, the null hypothesis (No. 40), which posits that there is no significant difference in cognitive abilities between college students with under-matric fathers and post-graduate fathers, is accepted. This acceptance is grounded in the evidence that the two groups do not exhibit significant differences in cognitive abilities at the .01 and .05 levels of confidence.

4.8.0 Relationship between different components of life skills and cognitive abilities of college students.

In order to find out the relation between life skills and cognitive abilities, the scores obtained from both the Life Skills Inventory developed by the investigator and Raven's Standard Progressive Matrices test (1998) developed by John C. Raven were utilized to calculate the coefficient of correlation between these two variables. For

calculating the correlation coefficient, Pearson product moment correlation method was employed.

A. Relationship between overall life skills and cognitive abilities of college students

Hypothesis No.41 states that there is no significant relationship between life skills and cognitive abilities of college students.

Table 4.52 shows the correlation between life skills and cognitive abilities of college students.

Table 4.52

Relationship between life skills and cognitive abilities of college students

	Life Skills	Cognitive Abilities
Life Skills	1.000	.138**
Cognitive Abilities	.138**	1.000

**Significant at 0.01 level

From the above table 4.52, it is revealed that there exists a positive yet minimal correlation between the life skills and cognitive abilities of college students. This correlation is deemed significant at the 0.01 level of significance. Consequently, the null hypothesis (No. 41), which initially posited that there is no substantial relationship between life skills and cognitive abilities among college students, is rejected. This rejection is grounded in the fact that a notable positive correlation, denoted by r = .138, has been established between these two variables. This analysis sheds light on the fact that, while the correlation is relatively modest, there is indeed a positive relationship between the life skills and cognitive abilities of college students. This implies that as a college student's life skills improve, their cognitive abilities also tend to rise, and vice versa.

B. Relationship between thinking component of life skills and cognitive abilities of college students

Hypothesis No.42 states that there is no significant relationship between thinking skills and cognitive abilities of college students.

Table 4.53 shows the correlation between thinking skills and cognitive abilities of college students.

Table 4.53

Relationship between thinking skills and cognitive abilities of college students

	Thinking Skills	Cognitive Abilities
Thinking skills	1.000	.156**
Cognitive Abilities	.156**	1.000

**Significant at 0.01 level

From the above table no 4.53, it is revealed that there exists a positive yet negligible correlation between the thinking skills and cognitive abilities of college students. This correlation is found to be statistically significant at the 0.01 level. As a result, the null hypothesis (No. 42), which originally posited that there is no substantial relationship between thinking skills and cognitive abilities among college students, is rejected. This rejection is based on the establishment of a significant positive correlation denoted by r = .156 between these two variables. This analysis highlights that although the correlation is relatively weak, there is indeed a positive relationship between the thinking skills and cognitive abilities of college students. This suggests that when a college student's thinking skills are more favourable, their cognitive abilities tend to be higher, and vice versa.

C. Relationship between social component of life skills and cognitive abilities of college students

Hypothesis No.43 states that there is no significant relationship between social skills and cognitive abilities of college students.

Table 4.54 shows the correlation between social skills and cognitive abilities of college students.

Table 4.54

Relationship between social skills and cognitive abilities of college students

	Social Skills	Cognitive Abilities
Social skills	1.000	.130**
Cognitive Abilities	.130**	1.000

**Significant at 0.01 level

The data from table 4.54 reveals that there exists a positive but negligible correlation between the social skills and cognitive abilities of college students. This correlation is deemed statistically significant at the 0.01 level. Consequently, the null hypothesis (No. 43), which initially posited that there is no substantial relationship between social skills and cognitive abilities among college students, is rejected. This rejection is founded on the establishment of a significant positive correlation denoted by r = .130 between these two variables. The analysis underscores that while the correlation is modest, there is indeed a positive relationship between the social skills and cognitive abilities of college students. This suggests that when a college student's social skills are more favorable, their cognitive abilities tend to be higher, and vice versa.

D. Relationship between emotional component of life skills and cognitive abilities of college students

Hypothesis No.44 states that there is no significant relationship between emotional skills and cognitive abilities of college students.

Table 4.55 shows the correlation between emotional skills and cognitive abilities of college students.

Table 4.55

Relationship between emotional skills and cognitive abilities of college students

	Emotional Skills	Cognitive Abilities
Emotional skills	1.000	-.039
Cognitive Abilities	-.039	1.000

NS=Not significant

From the above table 4.55, it is revealed that there is a not significant and negative correlation between the emotional skills and cognitive abilities of college students. Consequently, the null hypothesis (No. 44), which initially stated that there is no significant relationship between emotional skills and cognitive abilities among college students, is accepted. This acceptance is based on the absence of a significant correlation between these two variables.

4.9.0 Suggestions for developing life skills and enhancing cognitive abilities among college students in Mizoram

Developing life skills among college students in Mizoram is crucial for their personal growth, well-being, and success in various aspects of life. Here are some suggestions to promote life skills development:

1. Communication Skills:

➢ Organize workshops or seminars on effective communication. These workshops will aim to enhance communication prowess through comprehensive sessions covering verbal, nonverbal, and digital aspects. Experts could delve into active listening, body language nuances, and digital etiquette, offering practical tips for various scenarios.

➢ Encourage participation in debates, public speaking competitions, and group discussions. Encouraging participation in debates, public speaking events, and group discussions nurtures confidence and eloquence. These forums provide opportunities to articulate thoughts, develop persuasive abilities, and handle diverse perspectives, fostering well-rounded communicators.

➢ Establish a college newsletter or magazine to foster writing and editing skills. Initiating a newsletter or magazine offers an avenue for honing writing and editing skills. Through contributing articles, editing content, and managing the publication process, students gain hands-on experience in crafting compelling narratives and refining their communication styles.

2. Critical Thinking and Problem-Solving:

➢ Promote critical thinking in students by encouraging them to participate in activities like brain teasers, logic games and puzzles. By advocating for activities like puzzles, brain teasers, and logic games, students develop their analytical prowess and problem-solving skills. These challenges stimulate abstract thinking, strategic planning, and the ability to approach problems from different angles, fostering robust critical thinking abilities.

➢ Conduct workshops or sessions on problem-solving techniques and strategies. Hosting workshops or sessions dedicated to problem-solving equips students with diverse methodologies and approaches. They learn structured techniques, like root cause analysis or design thinking, empowering them to tackle complex issues systematically and creatively, nurturing adept problem solvers.

➢ Assign projects or case studies that require students to analyze and propose solutions to real-world problems. Assigning projects or case studies rooted in real-world scenarios prompts students to analyze multifaceted issues. This exercise not only sharpens analytical skills but also encourages students to propose viable solutions, fostering practical problem-solving capabilities while connecting classroom learning to real-life challenges.

3. Emotional Intelligence:

➢ Conduct workshops on emotional intelligence, self-awareness, empathy, and interpersonal skills. Tailored workshops cover facets like self-awareness, empathy, and interpersonal skills. These sessions delve into recognizing and managing emotions, understanding others' perspectives, and fostering healthy relationships. Practical exercises aid in self-reflection, enhancing emotional intelligence for better social interactions.

➢ Encourage students to participate in community service activities to develop empathy and compassion. Engaging in community service cultivates empathy and compassion. Interacting with diverse individuals and witnessing varied circumstances fosters understanding and empathy. Through these experiences, students develop a broader perspective and a heightened sensitivity.

➢ Foster a supportive and inclusive college environment that values emotional well-being. Fostering a nurturing and inclusive atmosphere within the college emphasizes emotional well-being. Initiatives like counseling services, peer support groups, and promoting open communication channels foster an environment where emotional needs are acknowledged, encouraging students to thrive holistically.

4. Time Management:

➢ Organize time management workshops or seminars to help students prioritize tasks and manage their time effectively. Tailored workshops focus on task prioritization and effective time utilization. Students learn strategies to allocate time efficiently, juggle multiple responsibilities, and avoid procrastination. Practical insights and interactive sessions aid in developing personalized time management techniques for enhanced productivity.

➢ Encouraging the utilization of productivity tools like to-do lists, calendars, and time-tracking apps instills efficient habits. These tools assist in organizing tasks, setting

reminders, and monitoring progress, empowering students to structure their schedules and optimize time allocation.

- Assign projects or assignments with deadlines to develop a sense of accountability and time management skills. Assigning projects or tasks with set deadlines instills accountability and cultivates time management skills. This practice helps students grasp the importance of prioritizing tasks, planning timelines, and meeting commitments, fostering a sense of responsibility and adeptness in time management.

5. Leadership and Teamwork:

- Promote student clubs and organizations that allow students to take leadership roles and collaborate with their peers. Encouraging involvement in diverse clubs fosters leadership as students take charge and collaborate within these settings. They gain hands-on experience in managing teams, organizing events, and honing leadership skills while fostering camaraderie and teamwork within their respective groups.
- Conduct leadership development programs, including training on team building, conflict resolution, and decision-making. Comprehensive programs cover team dynamics, conflict resolution, and decision-making strategies. These sessions provide practical insights into effective team building, navigating conflicts constructively, and making informed decisions, empowering students with essential leadership qualities crucial for diverse scenarios.
- Encourage participation in group projects or extracurricular activities that foster teamwork and collaboration. Participating in group projects or extracurricular activities emphasizes teamwork and collaboration. Students learn to leverage individual strengths within a team, communicate effectively, and achieve collective goals, fostering an understanding of collaborative dynamics beyond the classroom setting.

6. Financial Literacy:

- Offer workshops on personal finance management, budgeting, and saving. Tailored workshops cover crucial aspects like budgeting, saving strategies, and prudent financial management. Students learn practical skills in managing expenses, setting financial goals, and cultivating healthy saving habits, empowering them to make informed decisions about their finances.

➢ Invite financial experts to deliver talks or sessions on topics like investment, banking, and managing student loans. Inviting financial experts enriches students' knowledge on investments, banking practices, and handling student loans. These sessions provide insights into navigating financial landscapes, understanding risks and opportunities, and making sound financial choices in various life stages.

➢ Encourage students to participate in financial literacy competitions or challenges. Encouraging participation in financial literacy competitions or challenges sparks engagement and practical application of financial knowledge. These platforms offer opportunities to apply learned concepts, fostering a competitive spirit while reinforcing financial literacy skills in a dynamic and engaging manner.

7. Stress Management:

➢ Educate students on stress management techniques, mindfulness, and self-care practices. Providing insights into stress management techniques, mindfulness, and self-care practices equips students with tools to navigate stress. Educating them on relaxation methods, time management, and mental health awareness fosters resilience and empowers them to handle challenges effectively.

➢ Establish counseling services or support groups to provide a safe space for students to discuss their challenges and seek guidance. Establishing counseling services or support groups offers a safe haven for students to share concerns and seek guidance. These platforms facilitate open discussions, provide coping strategies, and ensure students have access to professional help and peer support, fostering mental well-being.

➢ Promote physical activities, such as sports, yoga, or meditation, as stress-relief methods. Encouraging participation in physical activities like sports, yoga, or meditation presents effective stress-relief avenues. Engaging in these activities not only promotes physical fitness but also aids in reducing stress, enhancing mental clarity, and fostering a balanced lifestyle for students.

8. Networking and Professional Development:

➢ Arrange networking events, career fairs, or alumni interactions to help students build professional connections. Organizing networking events, career fairs, or alumni interactions facilitates valuable connections. Students get a platform to engage with

professionals, learn about various industries, and forge relationships that can offer mentorship, advice, and potential career opportunities.

- Offer career counseling and guidance services to assist students in setting career goals and planning their paths. Providing personalized career counseling aids students in defining goals and planning their professional trajectories. These services offer insights into career options, resume building, interview skills, and strategies to align aspirations with practical steps for success.
- Encourage participation in internships, volunteering, or part-time jobs to gain practical experience and develop professional skills. Encouraging participation in internships, volunteering, or part-time roles allows students to gain hands-on experience. Such engagements develop practical skills, expose them to workplace dynamics, and build a professional skill set crucial for their future careers.

A holistic approach that combines educational activities, experiential learning, and a supportive college environment can greatly enhance the development of life skills among college students in Mizoram.

Enhancing cognitive abilities among Mizoram's college students fosters sharper thinking, problem-solving skills, and academic performance, empowering them for future challenges and opportunities. Here are some suggestions to enhance cognitive abilities:

1. ***Integrated Curriculum Design:*** Develop a curriculum that incorporates diverse teaching methods, interdisciplinary approaches, and real-world applications. This approach encourages critical thinking, problem-solving, and creativity among students. It should include hands-on experiences, case studies, and projects relevant to their field of study.
2. ***Faculty Training and Support:*** Provide on-going training and resources for faculty members to employ effective teaching techniques that engage students' cognitive abilities. Encourage them to incorporate innovative methods, technology, and active learning approaches into their teaching.
3. ***Creation of Learning Environments:*** Foster conducive learning spaces that stimulate cognitive growth. Utilize modern technology, flexible seating arrangements, and interactive resources to promote collaboration, exploration, and experimentation.

4. ***Promotion of Research and Inquiry:*** Encourage students to participate in research projects, both within their field of study and interdisciplinary subjects. This exposure enhances critical thinking, problem-solving, and analytical skills.

5. ***Support for Cognitive Health:*** Offer mental health and counseling services that support students' cognitive health. Promote wellness initiatives, stress management programs, and mindfulness practices to reduce anxiety and enhance cognitive function.

6. ***Technological Integration:*** Implement and leverage advanced technological tools and platforms that facilitate personalized learning experiences. This includes adaptive learning software, virtual labs, and online resources tailored to enhance cognitive abilities.

7. ***Structured Mentorship Programs:*** Establish mentorship programs connecting students with faculty or industry professionals. These relationships foster cognitive development through guidance, feedback, and exposure to practical experiences.

8. ***Assessment and Feedback Mechanisms:*** Use a variety of assessment methods that go beyond traditional exams, such as portfolios, presentations, and project-based evaluations. Provide constructive feedback to guide students' cognitive growth and encourage continuous improvement.

By implementing these strategies, institutions can create an environment that not only supports cognitive development but also fosters well-rounded, adaptable, and innovative thinkers among college students.

CHAPTER V

MAJOR FINDINGS, DISCUSSIONS, EDUCATIONAL IMPLICATIONS, RECOMMENDATIONS AND SUGGESTIONS FOR FURTHER RESEARCH

The present chapter focuses on the major findings, discussions, educational implications, recommendations, and suggestions for future investigation.

5.1.0 Major findings

The major findings of the study are listed below:

5.1.1 Construction and standardization of life skills inventory

(a) A Likert type life skills inventory had been constructed and standardized. Reliability was computed by test-retest method and is found to be .79. Criterion validity was established and is found to be 0.749. Norms for the inventory was also determined.

5.1.2 Level of life skills of college students in Mizoram

(a) College students having good ***life skills*** were very few and formed the lowest percentage (29.06%) of the students. Students with moderate life skills constituted the largest percentage (41.68%) followed by those with poor life skills (29.26%).

(b) The study showed that college students having good ***thinking skills*** (28.87%) were almost similar to those possessing poor thinking skills (28.49%). Most of the students were found to be having moderate thinking skills (42.64%).

With respect to components under thinking skills:

(i) College students with good self-awareness skills (32.89%) were relatively scarce. The largest portion (35.95%) was constituted by those with moderate self-awareness skills, followed by those with poor self-awareness skills (31.16%)

(ii) It was found that college students having good problem-solving skills formed the lowest percentage (27.92%) of the students. Those with moderate problem-solving skills constituted the highest percentage

(40.53%) followed by those with poor problem-solving skills (31.55%).

(iii) Among college students in Mizoram, 17.97 percent exhibited good decision-making skills, which constituted the very least. It could be seen that the majority of the students possessed moderate decision-making skills (60.42%), followed by those with poor decision-making skills (21.61%).

(iv) The research clearly revealed that as low as 23.14 percent of college students in Mizoram exhibit good critical thinking skills, while the highest proportion belonged to the students with moderate critical thinking skills (44.93%) which was followed by those with poor critical thinking skills (31.93%).

(v) College students who possessed good creative thinking skills constituted the smallest proportion at 24.86 percent. Those with moderate creative thinking skills made up nearly half of the sample population at 47.42 percent, while those with poor creative thinking skills accounted for 27.72 percent.

(c) College students with good ***social skills*** (28.49%) were once again identified as the minority, closely followed by those with poor social skills (29.64%). The largest percentage of students exhibited moderate social skills (41.87%).

With respect to components under social skills:

(i) The study revealed that only 26 percent of college students in Mizoram possessed good empathy skills. The most substantial percentage (43.79%) of college students exhibited moderate empathy skills, while 30.21 percent were identified as having poor empathy skills.

(ii) 32.89 percent of college students in Mizoram had good interpersonal relationship skills, slightly surpassing the 28.3 percent of college students who had poor interpersonal relationship skills. The highest percentage among college students was those exhibiting moderate interpersonal relationship skills, accounting for 38.81%, although the difference was minimal.

(iii) College students were found to be having a relatively small percentage of good effective communication skills at 31.36 percent and this figure

closely resembled the proportion of students with poor effective communication skills, which stood at 30.02 percent. Notably, the largest segment of college students possessed moderate effective communication skills (38.62%) which was relatively close to the other two results.

(d) It was observed that college students who demonstrated good ***emotional skills*** comprised an intermediate proportion (33.27%). The largest section consisted of students with moderate emotional skills (39.39%), while those with poor emotional skills constituted the smallest cohort (27.34%).

With respect to components under emotional skills:

(i) The percentage of college students having good coping with emotion skills (28.68%) were found to closely resemble those exhibiting poor coping with emotion skills (27.53%), while the largest group constituted of those students having moderate coping with emotion skills (43.79%).

(ii) College students possessing good coping with stress skills (23.71%) form the smallest proportion, while the highest percentage is exhibited by college students having moderate coping with stress skills (45.89%) which was followed by those with poor coping with stress skills (30.4%).

5.1.3 Level of cognitive abilities of college students in Mizoram

(a) College students having high ***cognitive abilities*** (33.65%) represented a significant proportion of the students compared to those possessing low cognitive abilities (22.56%). However, they were far less compared to college students exhibiting average cognitive abilities (43.79%) which formed the highest percentage.

5.1.4 Comparison of the different components of life skills and cognitive abilities of college students with reference to gender

(a) The research indicated that male college students in Mizoram had superior life skills compared to their female counterparts.

(b) Male college students were observed to possess significantly better thinking skills in comparison to their female counterparts.

(c) The study revealed that there was no significant disparity in the social skills of male and female college students in Mizoram.

(d) Male college students were found to exhibit better emotional skills than their female peers in Mizoram.

(e) It was determined that there was no significant distinction in the cognitive abilities between male and female college students in Mizoram.

5.1.5 Comparison of the different components of life skills and cognitive abilities of college students with reference to stream of study

(a) Research revealed that science college students in Mizoram exhibited better life skills than their counterparts in the commerce line.

(b) The study found no significant disparity in the life skills of science and arts college students in Mizoram.

(c) Similarly, there was no significant difference in the life skills of commerce and arts college students in Mizoram.

(d) Science college students demonstrated significantly superior thinking skills compared to commerce college students in Mizoram.

(e) Science college students possessed better thinking skills than arts college students in Mizoram.

(f) However, there was no significant difference in the thinking skills between commerce and arts college students in Mizoram.

(g) The research showed no significant variation in the social skills of science and commerce college students in Mizoram.

(h) Likewise, there was no significant difference in the social skills of science and arts college students.

(i) There was no significant difference in the social skills between commerce and arts college students in Mizoram.

(j) The study revealed that there was no significant difference in the emotional skills of science and commerce college students in Mizoram.

(k) It was also observed that there was no significant difference in the emotional

skills of science and arts college students.

(l) The study found no significant disparity in the emotional skills of commerce and arts college students in Mizoram.

(m) Science college students were found to be having higher cognitive abilities than commerce college students in Mizoram.

(n) Science college students exhibited significantly higher cognitive abilities than arts college students.

(o) The study concluded that there was no significant difference in the cognitive abilities of commerce and arts college students in Mizoram.

5.1.6 Comparison of the different components of life skills and cognitive abilities of college students with reference to father's working status

(a) Research indicated that students with working fathers exhibited superior life skills compared to those with non-working fathers.

(b) The study found no significant disparity in the thinking skills of college students based on their fathers' working status.

(c) Students whose fathers were employed were observed to possess significantly enhanced social skills in comparison to their counterparts with non-working fathers.

(d) The research concluded that there was no significant difference in the emotional skills of college students with reference to their fathers' working status.

(e) The study also revealed that there was no significant variation in the cognitive abilities of college students with reference to their father's working status.

5.1.7 Comparison of the different components of life skills and cognitive abilities of college students with reference to father's educational qualification

(a) The study found no significant difference in the life skills of college students with under-matric fathers and graduate fathers.

(b) The research indicated that there was no significant variation in life skills between college students with graduate fathers and those with post-graduate fathers in Mizoram.

(c) Students with post-graduate fathers were observed to possess superior life skills compared to their counterparts with under-matric fathers.

(d) The study revealed no substantial disparity in thinking skills between college students with under-matric fathers and those with graduate fathers in Mizoram.

(e) There was no significant difference in the thinking skills between college students with graduate fathers and post-graduate fathers in Mizoram.

(f) The research demonstrated that students with post-graduate fathers exhibited better thinking skills than students with under-matric fathers.

(g) The study showed that there was no significant difference in the social skills of college students with under-matric fathers and graduate fathers in Mizoram.

(h) Likewise, there was no significant variation in social skills between college students with graduate fathers and those with post-graduate fathers in Mizoram, as indicated by the study.

(i) The research found that students with post-graduate fathers displayed enhanced social skills in comparison to students with under-matric fathers.

(j) In Mizoram, the study concluded that there was no significant difference in emotional skills between college students with under-matric fathers and graduate fathers.

(k) Additionally, no significant difference in emotional skills was observed between college students with graduate fathers and post-graduate fathers in Mizoram.

(l) The study's results showed that there was no significant difference in emotional skills between college students with under-matric fathers and post-graduate fathers in Mizoram.

(m) The research found no significant difference in the cognitive abilities of college students with under-matric fathers and graduate fathers in Mizoram.

(n) Similarly, there was no significant variation in cognitive abilities between college students with graduate fathers and post-graduate fathers in Mizoram, as indicated by the study.

(o) The study's findings revealed that there was no significant difference in cognitive abilities between college students with under-matric fathers and post-graduate fathers in Mizoram.

5.1.8 Relationship between different components of life skills and cognitive abilities of college students

(a) A negligible positive correlation was observed between life skills and cognitive abilities.

(b) There existed a minimal positive relation between thinking skills and cognitive abilities.

(c) There was a negligible positive relationship identified between social skills and cognitive abilities.

(d) No significant link was found between emotional skills and cognitive abilities.

5.2.0 Discussion on the findings of the present study

The major findings of the present study are discussed in the following along with their probable reasons.

5.2.1 Discussion on the findings relating to the levels of life skills

(i) The study found that the largest percentage of the college students in Mizoram had moderate life skills, with roughly equal proportions exhibiting good and poor life skills.

Discussion: In line with the present study Mofrad (2013); Josephine and Selvakumar (2015); Buvaneswari and Juliet (2017); and Arif et al., (2020) also found that a significant proportion of college students had moderate life skills.

The prevalence of normal life skills among college students can be attributed to a confluence of factors. First and foremost, many educational systems worldwide tend to prioritize academic achievement over practical life skills development. Consequently, students may not receive formal training or guidance in essential life skills, leaving them ill-prepared for real-world challenges. Besides, socioeconomic background also plays a crucial role; students from disadvantaged backgrounds often have limited access to resources and opportunities that facilitate the acquisition of life skills, perpetuating the cycle of average skills proficiency. Peer influence may also play a significant role; students are highly influenced by their peers, and if the majority possesses average life skills, this can normalize such proficiency levels.

Cultural norms and values can further worsen this trend, with societies placing varying degrees of importance on academic versus practical achievements. Furthermore, the demands of the college environment, with its heavy academic workload and limited time for extracurricular activities or internships, can leave students with limited opportunities to gain and refine life skills through practical experiences. To address this issue, educational institutions should consider integrating formal life skills education into their curriculum, offering mentorship programs, and fostering a supportive environment that encourages students to develop and apply these crucial competencies alongside their academic pursuits.

(ii) The present study identified that a substantial portion of college students in Mizoram possessed moderate thinking skills, while approximately an equal number display either good or poor thinking skills.

Discussion: Consistent with the current research Tsui (1998); Buvaneswari and Juliet (2017); Nold (2017); and Repo et al., (2017) also found that the majority of students exhibited average or moderate levels of thinking skills, indicating the need for ongoing curriculum enhancements.

The presence of average thinking skills among most college students can be linked to a complex interplay of various factors. First, the traditional education system often prioritizes memorization and regurgitation of facts and information over critical thinking and problem-solving skills. This emphasis on rote learning can hinder the development of higher-order thinking abilities. Second, socio-economic disparities can play a significant role, as students from disadvantaged backgrounds may lack access to resources and opportunities that foster advanced thinking skills. Moreover, the college environment itself, with its heavy workload and focus on academic achievement, may leave students with limited time and motivation to cultivate their thinking skills outside of their coursework. Finally, the absence of specific thinking skills training or critical thinking courses in the curriculum can contribute to the prevalence of average thinking skills. To address this issue, colleges should consider incorporating critical thinking education into their programs, promoting a culture of intellectual curiosity, and providing additional resources and support to students from diverse backgrounds.

(iii) It had been found that a significant portion of college students in Mizoram possessed moderate social skills, while nearly equal numbers demonstrate either good or poor social skills.

Discussion: Aligned with the current study Josephine and Selvakumar (2015); Buvaneswari and Juliet (2017); and Vergara and Tajomera (2023) unveiled that majority of college students showed moderate social skills emphasizing the need to strengthen these skills.

The transition from high school to college could be challenging, and students often face a steep learning curve in adapting to new social environments and expectations, which could affect their social skill development. Peer influence could also play a substantial role, as students may conform to the social skill levels of their immediate social circles, perpetuating the prevalence of average skills. Lastly, the increasing reliance on digital communication and screen-based interactions could limit face-to-face social experiences, further impacting the development of strong social skills. To address this issue, colleges should consider incorporating social skills training into their curriculum, creating opportunities for diverse social interactions, and fostering a supportive campus environment that encourages the development of effective interpersonal skills alongside academic pursuits.

(iv) It has been indicated that the highest percentage of college students in Mizoram had moderate emotional skills, with a higher proportion demonstrating superior emotional skills than those with poor skills.

Discussion: In alignment with the current research, Josephine and Selvakumar (2015); Buvaneswari and Juliet (2017); and Katyal and Aggarwal (2021) also revealed that a significant portion of college students possessed average or moderate emotional skills, underlining the urgency to enhance these skills.

The shift from high school to college is a significant phase in young adults' lives, characterized by newfound freedom, academic responsibilities, and the challenge of establishing new social connections. Many college students experience a blend of excitement and anxiety as they adjust to the college environment, with tasks like moving away from home, facing academic pressures, and meeting new people. This can lead to heightened stress levels, with anxiety disorders being notably

prevalent among college students. Furthermore, while social and emotional skills are crucial for effective participation in school settings, not all students have had the opportunity or resources to develop these skills to a high level before entering college. The combination of these factors suggests that many college students might have average levels of emotional skills, highlighting the importance of integrating Social Emotional Learning (SEL) methodologies into educational settings to assist students in understanding their emotions and cultivating empathy.

5.2.2 Discussion on the findings relating to the levels of cognitive abilities

(i) The current research had found that the largest percentage of college students in Mizoram had average cognitive abilities, with a higher proportion exhibiting high cognitive abilities compared to those with low abilities.

Discussion: In line with the present research Plant and Richardson (1958); Yesikar et al., (2015); and Malsawmi and Lalchuangkima (2016) also found that a significant proportion of college students had average level of cognitive abilities.

The majority of college students exhibit average levels of cognitive abilities due to a combination of factors. Cognitive abilities are influenced by both genetic and environmental factors. During college years, students are exposed to diverse learning experiences and challenges, but not all have access to resources or environments that stimulate higher cognitive functioning. In addition, cognitive development is a continuous process, and college-aged individuals are still in the phase of maturing both neurologically and psychologically. A broader factor could be the education system itself, which often emphasizes rote learning and memorization rather than critical thinking and problem-solving in many regions. Furthermore, socioeconomic factors also play a role, as students from disadvantaged backgrounds might not have had early exposure to enriching educational experiences. Finally, the statistical concept of regression to the mean suggests that in any large population, like college students, most individuals will naturally fall close to the average in any given measure.

5.2.3 Discussion on the findings relating to comparison of the different components of life skills and cognitive abilities of college students with reference to gender

(i) The research indicated that male college students in Mizoram had superior life skills compared to their female counterparts.

Discussion: Consistent with the current research, Rani et al., (2018) and Rajkumari et al., (2021) found that male students had better life skills than their female counterparts. On the contrary, Sridevi and Amuthavalli (2020) showed that female students had better life skills than male college students. However, studies done by Prakash and Devi (2015); and Prakash and Topno (2021) revealed that there was no significant difference between male and female college students.

One of the reasons could be that traditional societal roles have often positioned males in situations that demand the early development of certain life skills. Historically, males might have been expected to take on responsibilities such as earning for the family, making decisions, or handling external affairs, thus potentially giving them frequent opportunities to cultivate and sharpen their thinking skills. Furthermore, societal norms might allow males more freedom and independence from a younger age, fostering self-reliance and adaptability. Males have traditionally been encouraged to engage in group activities such as team sports or group tasks that emphasize competition, teamwork, and leadership. These experiences can foster the development of certain social skills, emphasizing assertiveness, negotiation, and conflict resolution. Emotionally, societal expectations have often demanded that males exhibit stoicism and suppress emotional expressions. Such expectations might lead some to believe that males have better emotional skills, particularly when it comes to self-regulation and coping.

(ii) Male college students were observed to possess significantly better thinking skills in comparison to their female counterparts.

Discussion: In line with the present study, Mofrad (2013); Arif et al., (2020) and Sánchez-Hernando et al., (2021) also showed that male students had significantly better thinking skills than female students. Contrary to the study, Rani and Neeraj (2020); and Vasli et al. (2023) found that female college students had better thinking skills as compared to their male counterparts. Prasad (2018); Mary and Rama (2021); and Sughra and Usmani (2022) revealed that there was no significant difference in the thinking skills between male and female college students.

Mizoram, like many other regions, has its unique socio-cultural fabric. Traditionally, societal expectations and certain cultural practices have assigned roles based on gender, potentially offering males more opportunities in decision-making or leadership positions, thereby nurturing their analytical and problem-solving skills. Educational systems, influenced by these cultural norms, might have inadvertently favoured teaching methodologies that resonate more with the learning preferences of male students. Moreover, societal expectations could push male students to pursue subjects or activities perceived as requiring more intensive thinking skills like mathematics, physics, or engineering, while female students might be directed towards areas traditionally seen as "suitable" for them. Last but not the least, due to traditional gender roles, males might have been thrust into decision-making positions or given more freedom to navigate challenges independently, fostering adaptability and problem-solving skills.

(iii) Male college students were found to exhibit better emotional skills than their female peers in Mizoram.

Discussion: Contrary to the current research, Fida (2018); Prasad (2018); and Rani and Neeraj (2020) indicated that female college students had better emotional skills than their male counterparts. However, research done by Singh (2013); Waghmare (2015); and Katyal and Aggarwal (2021) showed that there was no significant difference in the emotional skills of male and female college students.

Since Mizoram is a tribal state in India, unique socio-cultural practices might offer some insights into any perceived disparities in emotional skills between male and female college students. Historically, Mizo society has held particular expectations for males in terms of leadership, decision-making, and conflict resolution, potentially providing them with more opportunities to hone emotional skills like emotional intelligence, resilience, and emotional regulation. These roles might require men to develop strong coping mechanisms, enabling them to handle stress and challenges effectively. Consequently, over generations, societal structures and family dynamics might have indirectly fostered better emotional skills in males, preparing them for the responsibilities they are traditionally expected to shoulder.

5.2.4 Discussion on the findings relating to comparison of the different components of life skills and cognitive abilities of college students with reference to the stream of study

(i) Research revealed that science college students in Mizoram exhibited better life skills than their counterparts in the commerce line.

Discussion: In Mizoram, science college students often engage in a curriculum rich in experiential learning through laboratory work, research projects, and field studies, equipping them with practical skills and analytical thinking. This hands-on approach fosters a deep understanding of real-world applications, enhancing their problem-solving and critical thinking abilities. Also, collaborative lab projects and group research foster improved social skills, as students must work effectively in teams, communicate their findings, and adapt to different group dynamics. The iterative nature of scientific research, where hypotheses can be proven or disproven, aids in building resilience and emotional skills, teaching students to handle setbacks and celebrate successes in equal measure. Conversely, commerce students, while mastering vital business and economic concepts, might not always get the same level of hands-on or collaborative experiences as their science counterparts. Their curriculum is often more individualistic and theoretical, possibly leading to a narrower development of life skills compared to the broader exposure science students receive in Mizoram.

(ii) Science college students demonstrated significantly superior thinking skills compared to commerce college students in Mizoram.

Discussion: In alignment with the present research, Lalrinmawii and Chuaungo (2022) revealed that science college students possessed better thinking skills than commerce college students.

In Mizoram's educational landscape, science college students are frequently immersed in a curriculum that emphasizes hypothesis-driven inquiry, experimental design, and analytical evaluation. The nature of scientific subjects necessitates the application of logical reasoning, deduction, and systematic thinking, promoting the development of keen analytical and critical thinking skills. Laboratory experiments,

field studies, and research projects could further enhance these students' ability to think innovatively and approach problems from multiple angles. On the other hand, while commerce education in Mizoram certainly involves analytical thinking, especially in areas like statistics or financial analysis, the focus is often more on understanding established business theories and models. The more rigid framework of commerce might not challenge students' thinking skills to the same extent as the constantly evolving and questioning nature of scientific study.

(iii) Science college students possessed better thinking skills than arts college students in Mizoram.

Discussion: Consistent with the current study, Josephine and Selvakumar (2015); Lalrinmawii and Chuaungo (2022); and Anisha et al. (2023) found that science college students had better thinking skills when compared to arts college students. However, contrary to the study Williamson (2011); Arif et al. (2020); and Choudhary and Kanwal (2022) showed that there was no significant difference in the thinking skills of science and arts college students.

Science college students are exposed to a curriculum centered on evidence-based inquiry, rigorous experimental methodologies, and systematic data analysis. This foundation necessitates the cultivation of sharp analytical and critical thinking skills, as students must discern patterns, formulate hypotheses, and solve intricate problems. Moreover, the dynamic nature of scientific research continually challenges them to refine their thinking and adapt to new discoveries. On the other hand, arts students delve into humanities and social sciences, which, while rich in critical analysis, often emphasize interpretative and subjective understanding. The approach in arts is more about exploring diverse perspectives and cultural contexts rather than the empirical problem-solving that science demands. While both disciplines hone thinking skills, the more structured and empirical approach of science could give its students an edge in analytical thinking.

(iv) Science college students were found to be having higher cognitive abilities than commerce college students in Mizoram.

Discussion: Contrary to the present study, Malsawmi and Lalchuangkima (2016) found that there was no significant difference in the cognitive abilities of science and commerce college students.

The rigorous academic curriculum for science college students often demands a deeper analytical and logical reasoning approach, which may contribute to enhanced cognitive abilities. Scientific subjects require students to grapple with complex problems, analyse intricate patterns, and comprehend multifaceted systems. This constant engagement with challenging content could foster neural pathways that enhance cognitive functions. Furthermore, the hands-on nature of scientific experiments and lab work ensures students frequently apply theoretical knowledge in practical contexts, promoting better retention and understanding. Commerce students, on the other hand, often focus on business principles, management techniques, and economic theories, which, while essential, might not always provide the same cognitive stretch as scientific problem-solving. The difference in curriculum intensity and the nature of analytical thinking required in science courses may lead to a disparity in cognitive abilities between science and commerce students in Mizoram.

(v) Science college students exhibited significantly higher cognitive abilities than arts college students.

Discussion: Studies done by Sharma (1982); Chatterji (1983); Malsawmi (1997); Khaleefa et al. (2014); Malsawmi and Lalchuangkima (2016); and Mittal (2017) revealed that science college students possessed higher cognitive abilities than arts students. In contrast to the present research, Dhammi and Choubey (2014); and Sayyiead (2016) showed that there was no significant difference in the cognitive abilities of science and arts college students.

In Mizoram, science college students often undergo an academically intensive curriculum that necessitates strong logical and problem-solving skills. The nature of scientific studies, which often involve understanding intricate concepts, conducting experiments, and deducing patterns, can stimulate and challenge the brain, potentially enhancing cognitive abilities. Such frequent cognitive engagement with multifaceted scientific problems might contribute to the development and strengthening of neural pathways associated with higher cognitive ability. Conversely, arts college students

delve deep into subjects that prioritize interpretation and cultural understanding. While these subjects foster a broad perspective and enrich creativity, they might not always offer the consistent cognitive challenges seen in hard sciences. The difference in the cognitive rigor demanded by the respective curriculums might explain the perceived difference in cognitive abilities between science and arts students in Mizoram.

5.2.5 Discussion on the findings relating to comparison of the different components of life skills and cognitive abilities of college students with reference to father's working status

(i) *Research indicated that students with working fathers exhibited superior life skills compared to those with non-working fathers.*

Discussion: In contrast with the present study, Daisy (2018) indicated that there was no significant difference in the life skills of college students with reference to father's working status.

College students with working fathers might exhibit better life skills due to several factors. A working father often serves as a role model, illustrating the importance of discipline, responsibility, and dedication to his children. Growing up observing these traits can inculcate similar habits and work ethics in students. In addition, a household with a working father might provide a more financially stable environment, allowing students to access better educational resources, extracurricular activities, and skill-development opportunities. This exposure can enhance their thinking, social, and emotional skills. Furthermore, the practical experiences and challenges faced by working fathers can be shared with their children, equipping them with real-world insights and problem-solving techniques. On the contrary, students with non-working fathers might not have the same level of exposure to workplace dynamics, discipline, and problem-solving, which can be essential in developing certain life skills.

(ii) *Students whose fathers were employed were observed to possess significantly enhanced social skills in comparison to their counterparts with non-working fathers.*

Discussion: In alignment with the current research, Kusha and Ritu (2017) found that students with working fathers had better social skills compared to the students with non-working fathers.

A primary reason could be, the modelling of interpersonal dynamics they witness as their fathers navigate diverse professional relationships and environments. Such experiences, when shared at home, can instil the importance of effective communication, understanding social cues, and being adaptable in varying social scenarios. Moreover, families with working fathers may have more opportunities for social interactions through workplace events, gatherings, or networking, exposing students to a broader spectrum of societal structures and norms early on. This increased exposure helps students assimilate the nuances of social interactions, thus refining their social skills. Conversely, students with non-working fathers might have limited access to such diverse interactions and experiences, potentially impacting their ability to develop social skills.

5.2.6 Discussion on the findings relating to comparison of the different components of life skills and cognitive abilities of college students with reference to father's educational qualification

(i) Students with post-graduate fathers were observed to possess superior life skills compared to their counterparts with under-matric fathers.

Discussion: Conforming with the current study, Anuradha (2014); and Daisy (2018) revealed that students with post-graduate fathers had significantly better life skills than students with under-matric fathers.

The educational attainment of a parent, especially at the postgraduate level, emphasizes the value of lifelong learning, discipline, and perseverance, qualities that are likely passed down or modelled to their children. These students benefit from an environment that emphasizes the importance of education, critical thinking, and informed decision-making. Furthermore, higher educational backgrounds often correlate with better socio-economic conditions, leading to enriched exposure to diverse experiences, resources, and opportunities. Such exposure fosters the development of essential life skills like problem-solving, adaptability, and effective

communication. On the other hand, students with under-matric fathers might face challenges related to limited resources, reduced exposure to diverse experiences, and a possible lack of emphasis on the broader benefits of education, impacting the holistic development of their life skills.

(ii) The research demonstrated that students with post-graduate fathers exhibited better thinking skills than students with under-matric fathers.

Discussion: Aligned with the present study, Ocak and Kutlu-Kalender (2017); and Orhan and Tekin (2022) showed that students with post-graduate fathers possessed better thinking skills than students with under-matric fathers. However, studies done by Gjelaj and Shala (2014); and Ewies et al. (2021) found that there was no significant difference in the thinking skills between under-matric fathers and post-graduate fathers of college students.

There can be several reasons why college students with post-graduate fathers tend to exhibit significantly better thinking skills compared to students with under-matric fathers. First, the educational background of parents often influences the academic environment at home. Post-graduate fathers are more likely to value and prioritize education, creating a conducive atmosphere for learning, which includes exposure to books, discussions, and critical thinking exercises from an early age. Second, post-graduate fathers are typically better equipped to provide educational support and guidance to their children, aiding them in developing effective study habits and problem-solving skills. Third, financial stability often accompanies higher educational attainment, allowing post-graduate fathers to invest in educational resources and extracurricular activities that stimulate cognitive development. Moreover, having well-educated role models can inspire college students to set higher academic goals and foster a mindset of continuous learning. Lastly, social networks and connections that post-graduate fathers may have can offer valuable opportunities for mentorship and exposure to diverse perspectives, further enriching a student's thinking skills.

(iii) The research found that students with post-graduate fathers displayed enhanced social skills in comparison to students with under-matric fathers.

Discussion: Conforming with the current research, Gjelaj and Shala (2014); and Ngwoke and Ngwoke (2017) revealed that students with post-graduate fathers had better social skills when compared to students with under-matric fathers.

The educational attainment of parents often correlates with socioeconomic status, and post-graduate fathers are more likely to provide a stable and supportive family environment, which fosters healthy social development. These students often have access to extracurricular activities, clubs, and social events, enriching their social experiences and interpersonal skills. Additionally, post-graduate fathers often emphasize the value of education, which extends to teaching their children essential life skills, including effective communication, empathy, and conflict resolution. Furthermore, exposure to a wider range of ideas and perspectives in academically inclined households can promote open-mindedness and adaptability, essential traits for successful social interactions. Moreover, post-graduate fathers may possess broader social networks, introducing their children to diverse social circles and role models who inspire them to cultivate better social skills. In contrast, students with under-matric fathers may face socioeconomic challenges that hinder their exposure to such opportunities and resources, potentially impacting their social development. Overall, the combination of a supportive home environment, access to extracurricular activities, and exposure to diverse social influences contributes to the superior social skills observed in college students with post-graduate fathers in Mizoram.

5.2.7 Discussion on the relationship between different components of life skills and cognitive abilities of college students

(i) A negligible positive correlation was observed between life skills and cognitive abilities.

Discussion: The study found that in Mizoram, there is a significant correlation between favorable life skills and higher cognitive abilities among college students, creating a mutually reinforcing relationship. First, strong life skills, including effective communication, time management, and emotional intelligence, enable students to navigate the challenges of academic life more efficiently. These skills empower them to organize their study routines, seek help when needed, and manage stress effectively, all of which contribute to improved cognitive functioning. Furthermore, students with

strong life skills tend to have better interpersonal relationships, fostering an environment of collaboration and shared learning experiences. Engaging in discussions, group projects, and teamwork enhances their critical thinking, problem-solving, and information-processing abilities. Conversely, as students hone their cognitive skills through education, they often indirectly develop life skills such as discipline, adaptability, and perseverance, which are essential for academic success and personal growth. This symbiotic relationship between life skills and cognitive abilities ultimately leads to well-rounded college students who are not only academically adept but also equipped with the practical skills necessary for success in Mizoram's diverse and dynamic academic and social landscape.

(ii) There existed a minimal positive relation between thinking skills and cognitive abilities.

Discussion: The observed positive correlation between college students' thinking skills and cognitive abilities in Mizoram could be attributed to several interconnected factors. Firstly, robust thinking skills, encompassing critical thinking, problem-solving, and information-processing, equip students with the mental tools needed to excel academically. These skills enhance their ability to comprehend complex concepts and synthesize information effectively, leading to improved cognitive functioning. Conversely, as students enhance their cognitive abilities through rigorous academic pursuits, they naturally refine their thinking skills as a result of exposure to challenging coursework and intellectual engagement. Additionally, the educational environment in Mizoram may emphasize holistic development, encouraging students to nurture both their cognitive and thinking skills simultaneously. This interplay ultimately fosters a mutually reinforcing relationship, enhancing students' overall academic proficiency and cognitive capabilities in the dynamic educational landscape of Mizoram.

(iii) There was a negligible positive relationship identified between social skills and cognitive abilities.

Discussion: The study revealed that in Mizoram, there is a positive correlation between social skills and cognitive abilities which can be attributed to several

intertwined factors. Firstly, effective social skills, such as communication, teamwork, and interpersonal relationships, facilitate a positive learning environment. When students engage in collaborative group work, discussions, and shared learning experiences, their cognitive abilities are stimulated as they are exposed to diverse perspectives and critical thinking challenges. Moreover, strong social skills enable students to seek help from peers and faculty when needed, enhancing their understanding of complex subjects. Conversely, as students develop higher cognitive abilities through academic pursuits, they become better equipped to navigate complex social interactions and adapt to diverse social contexts. This reciprocal relationship between social skills and cognitive abilities leads to well-rounded college students in Mizoram, who not only excel academically but also possess the interpersonal and problem-solving skills necessary for success in both their academic endeavours and social interactions, reflecting the dynamic educational and social landscape of Mizoram.

5.3.0 Educational implications of the study

The present research holds significant educational implications, shedding light on the crucial intersection of life skills and cognitive abilities among college students in Mizoram. This study has the potential to contribute substantially to educational practices and policies in the region. First, understanding the relationship between life skills and cognitive abilities allows educators to tailor and enhance the existing curriculum to better address the specific needs of college students in Mizoram. Integrating life skills development into the academic curriculum can promote holistic education; preparing students not only for academic success but also for the challenges they may face in their personal and professional lives. Second, the construction and standardization of the Life Skills Inventory will provide a tool for identifying specific life skills that may be lacking among college students in Mizoram. This information is invaluable for educators and policymakers as it enables them to target interventions and design programs aimed at filling these gaps, ensuring that students are adequately equipped with the essential skills for personal and professional success. Third, recognizing the relationship between life skills and cognitive abilities allows for the development of personalized learning strategies. By tailoring teaching methods to

enhance both cognitive abilities and life skills, educators can create a more supportive and engaging learning environment. This approach is likely to result in improved academic performance, increased motivation, and better overall well-being among college students. Fourth, the study's findings can serve as a catalyst for a paradigm shift in educational practices, emphasizing the importance of holistic development. Beyond academic achievements, colleges can actively promote the acquisition of life skills, fostering personal growth, emotional intelligence, and resilience. This holistic approach aligns with the evolving demands of the 21st-century workforce, where interpersonal skills and adaptability are increasingly valued. Fifth, the research can inform the development of guidance and counseling programs that specifically target the identified life skills needs of college students in Mizoram. These programs can offer support in areas such as decision-making, communication, time management, and stress management. By addressing these aspects, colleges can contribute to the overall well-being and mental health of their students. Sixth, life skills play a crucial role in preparing students for the demands of the workforce. The study's insights into the relationship between life skills and cognitive abilities can inform the development of career readiness programs. These programs can equip students with the skills and mindset necessary for successful transition into the professional world, promoting employability and long-term career success. Seventh, the research findings can be instrumental in shaping educational policies in Mizoram. Policymakers can use the evidence-based insights to formulate policies that prioritize the integration of life skills education within the broader academic framework. This may involve curriculum adjustments, teacher training programs, and the establishment of support systems to ensure the effective implementation of life skills education. Eight, the study's educational implications extend beyond individual students to the broader society. Graduates who possess a strong foundation in both cognitive abilities and life skills are more likely to contribute positively to their communities. By fostering well-rounded individuals, colleges in Mizoram can play a pivotal role in building a society characterized by resilience, empathy, and effective problem-solving.

In a nutshell, the research on the construction and standardization of a Life Skills Inventory and its relationship with cognitive abilities among college students in Mizoram holds immense potential to transform educational practices. By addressing

the identified gaps and integrating life skills development into the educational system, colleges can better prepare students for the challenges they will face in their academic, professional, and personal lives. The implications of this study extend to curriculum design, teaching methodologies, counseling services, and policy formulation, ultimately contributing to the holistic development of individuals and the betterment of society.

5.4.0 Recommendations

Following are the recommendations to enhance life skills and improve cognitive abilities among college students in Mizoram:

5.4.1 Recommendations for improvement in life skills

Enhancing life skills, including thinking skills, social skills, and emotional skills, among college students in Mizoram is vital for their holistic development. Here are some recommendations to achieve this:

1. ***Integrated Life Skills Curriculum:*** Integrate life skills development into the college curriculum. Offer courses or workshops that explicitly focus on thinking skills, emotional intelligence, and interpersonal communication, ensuring that these skills are given the same importance as academic subjects.
2. ***Critical Thinking Exercises:*** Incorporate critical thinking exercises and problem-solving activities across various disciplines. Encourage students to analyze complex issues, evaluate evidence, and engage in debates to enhance their thinking skills.
3. ***Peer Learning and Collaboration:*** Promote peer learning and collaborative projects. Working in teams exposes students to different viewpoints, improving their social and teamwork skills while fostering a culture of cooperation.
4. ***Emotional Intelligence Workshops:*** Organize workshops on emotional intelligence, self-awareness, and self-regulation. These sessions can help students understand and manage their emotions, improving their overall emotional well-being.
5. ***Communication Skills Training:*** Offer communication skills training to help students become effective and empathetic communicators. This can include

public speaking courses, conflict resolution workshops, and active listening exercises.

6. ***Cultural Sensitivity Programs:*** Promote cultural sensitivity and diversity awareness programs. Encourage students to participate in cultural exchange activities to develop empathy, respect for differences, and strong social skills.
7. ***Mental Health Support Services:*** Establish mental health support services on campus. Provide access to counselors and resources that can help students cope with stress, anxiety, and emotional challenges, ensuring their emotional well-being.

By implementing these recommendations, colleges in Mizoram can create a conducive environment for students to develop not only their academic skills but also the essential life skills needed for personal growth, successful social interactions, and emotional resilience throughout their college journey and beyond.

5.4.2 Recommendations for improvement in cognitive abilities

Improving cognitive abilities among college students in Mizoram is essential for their academic success and future prospects. Here are five focused recommendations to foster higher intelligence levels:

1. **Cognitive Skills Development Courses**: Incorporate cognitive skills development courses within the curriculum. These courses should focus on memory improvement, problem-solving techniques, and critical thinking exercises. Providing students with structured opportunities to enhance their cognitive abilities can lead to great improvements.
2. **Research-Based Learning**: Promote research-based learning and critical analysis across disciplines. Encourage students to engage in research projects, case studies, and independent investigations. Hands-on research experiences challenge their analytical and problem-solving skills, contributing to higher intelligence.
3. **Intellectual Engagement**: Create a culture of intellectual engagement by organizing seminars, guest lectures, and academic debates. Invite experts to share their knowledge and inspire students to explore diverse subject areas.

Intellectual curiosity nurtured through such activities can lead to increased intelligence.

4. **Technology Integration**: Leverage educational technology platforms and online resources to facilitate self-directed learning. Encourage students to explore online courses, interactive simulations, and educational apps that promote cognitive development and problem-solving.
5. **Mentorship Programs**: Establish mentorship programs connecting students with experienced faculty members or professionals in their field of interest. Mentors can guide students in intellectual pursuits, challenge them to think critically, and provide valuable insights, contributing to higher IQ levels.

By implementing these recommendations, colleges in Mizoram can create a stimulating educational environment that fosters higher intelligence levels among their students. Nurturing cognitive skills, critical thinking, and a passion for learning can have a profound impact on both academic success and future career prospects.

5.5.0 Suggestions for further research

Following have been suggested for further research:

1. Conduct a longitudinal study to observe how life skills among college students in Mizoram evolve over time and whether there are changes in cognitive abilities as they progress through their academic years.
2. Compare the life skills and cognitive abilities of college students in Mizoram with those from other states in India to identify potential regional variations and their impact on these skills.
3. Explore the specific correlations between different life skills and distinct cognitive abilities to understand the distinctions of how these skills interact and potentially influence each other.
4. Investigate external factors such as family background, socio-economic status, or educational environment to determine their impact on the development and manifestation of life skills among college students.
5. Explore the various age groups or educational levels beyond college students to observe if there are differences or similarities in life skills and cognitive abilities across different educational phases.

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APPENDIX-I

BIOGRAPHICAL DATA

Full Name:

Father's Name:

Roll No:

College:

Semester: **Arts/Science/Commerce:**

Please put a tick (√) Mark:

Gender: (Male/Female)

Is your father a salaried/payed worker? (Yes/No)

Father's educational qualification: (Under Matric/Matric-Graduate/Post graduate)

Life Skills inventory

Instructions: Below is a list of statements aimed to study the life skills of college students. Please put a tick mark (✓) on any one of the five boxes given on the right side of each statement. If you **Strongly Agree**, put a tick mark below **SA**, if you **Agree**, put a tick mark below **A**, if you are **Undecided or uncertain**, put a tick mark under **U**, if you **Disagree**, put a tick mark under **D** and if you **Strongly Disagree**, put a tick mark under **SD.** ***Please respond to every item***. There is no time limit but you have to respond as quickly as possible.

Sl. No.	Statements	SA	A	U	D	SD
1	I can tell what I like or dislike easily					
2	I am unaware of my own moods					
3	I do not really know what I need in life					

4	I do not pay attention to how I feel inside					
5	I do not let my feelings rule my life					
6	I can predict how I will react in a given situation					
7	Before criticizing somebody, I try to imagine how I would feel if I were in his/her place					
8	It upsets me to see someone being treated disrespectfully					
9	When someone else is feeling excited, I tend to get excited too					
10	I find it difficult to see things from the other person's point of view					
11	I become irritated when someone cries					
12	When I see someone being taken advantage of, I feel protective towards him/her					
13	Before solving a problem, I first figure out exactly what the problem is					
14	When solving a problem, I do the first thing that comes into my head					
15	When comparing solutions to problems, I look at how each solution will affect the people involved					
16	When I solve a problem, I choose the easiest solution					
17	Before solving a problem, I keep an open mind about what causes a problem					
18	If my solution to problem is not working, I tend to give up solving it					
19	Once I have solved a problem, I step back to see how my solution is working					
20	Instead of attempting to solve it, I tend to run away from problem situation					
21	No matter how difficult a problem is, I am up for the challenge					
22	I make decisions after thinking about all the information available among the different choices					
23	I find it difficult to make decisions					
24	I think of possible results before I take action					
25	I develop my ideas by gathering information					

26	I have a habit of doing things without giving serious thought					
27	I am able to give reasons for my opinions					
28	I gather enough information to support my opinion					
29	I take action based on what majority of people are saying					
30	I quickly believe what other people are saying					
31	I put my ideas in order of importance					
32	I do not compare ideas when thinking about a topic					
33	I keep my mind open to different ideas when planning to make a decision					
34	I develop a checklist to help me think about an issue					
35	I make sure the information I use is correct					
36	I hate trying out new ways of doing things					
37	I take up new activities or hobbies on a regular basis					
38	I often come up with ideas that others have not thought of					
39	I enjoy finding out more about things that are new to me					
40	I find it difficult to think of new ideas for solving problems					
41	I am open to new ideas, even those that challenge the way I think					
42	I enjoy thinking about the connections and similarities between things					
43	I dislike activities that involve patterns, such as crosswords and jigsaw puzzles					
44	I make an effort to use techniques that help me think differently					
45	I try out several ideas before settling on a solution to any problem					
46	I try to find ways of doing things even when they sound impossible					
47	I am able to motivate and convince others to do what is needed					
48	I listen well to what others have to say					
49	I enjoy meeting new people and making new friends					

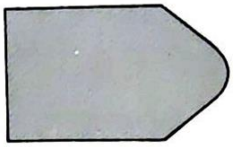
50	I get bored when others share their problems with me					
51	I enjoy cooperating with others for work					
52	I can work efficiently in a team					
53	I can be trusted by others for work					
54	I do not have people in my life whom I can really trust					
55	I use different tone of voice to reinforce what I try to say					
56	I do not hear everything a person says, because I think about what I want to say					
57	When talking to someone, I try to maintain eye contact					
58	I interrupt other people to say what I want to say before I forget it					
59	I recognize when two people are trying to say the same thing, but in different ways					
60	I watch other people's body language to help me understand what they are trying to say					
61	When I listen to someone, I try to understand what they are feeling					
62	I find it difficult to get my point across					
63	I organize thoughts in my head before speaking					
64	I make sure I understand what another person says before I respond					
65	When someone gets mad, I change my tone of voice to help calm them down					
66	I do some fun activities to divert my attention when I feel agitated					
67	I go for walks or get fresh air when I feel sad					
68	I do physical activities to release tensions in my mind					
69	I prioritize what is truly important and drop others if it becomes too burdensome					
70	I schedule my time properly to avoid problems from the many responsibilities of life					
71	I try to eat healthy and sleep more to reduce life stressors					
72	I try to follow a daily routine so that life becomes a little less stressful					

APPENDIX-II

STANDARD PROGRESSIVE MATRICES

SETS A, B, C, D and E

Prepared by J C Raven



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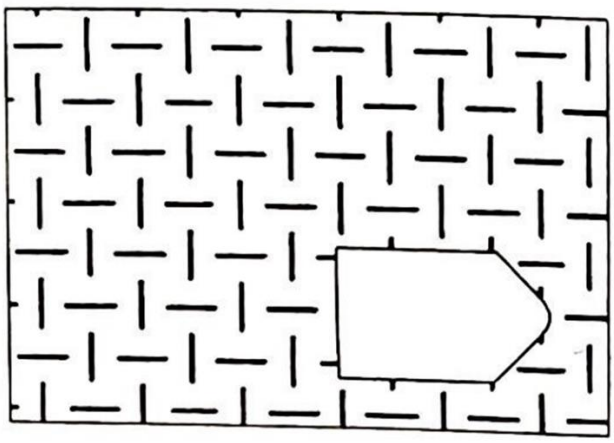
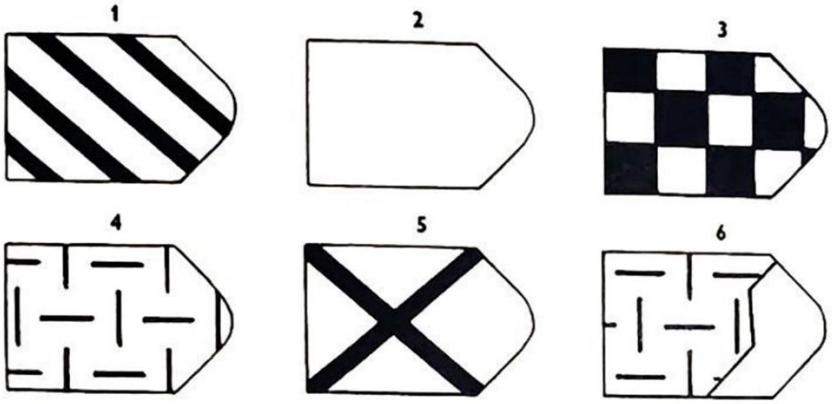
SET A

A 1





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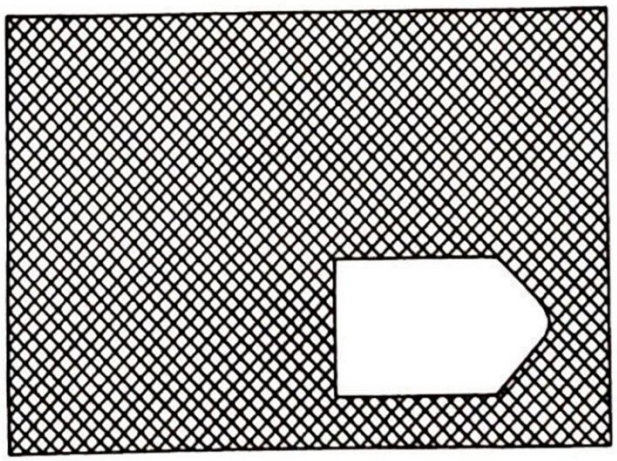
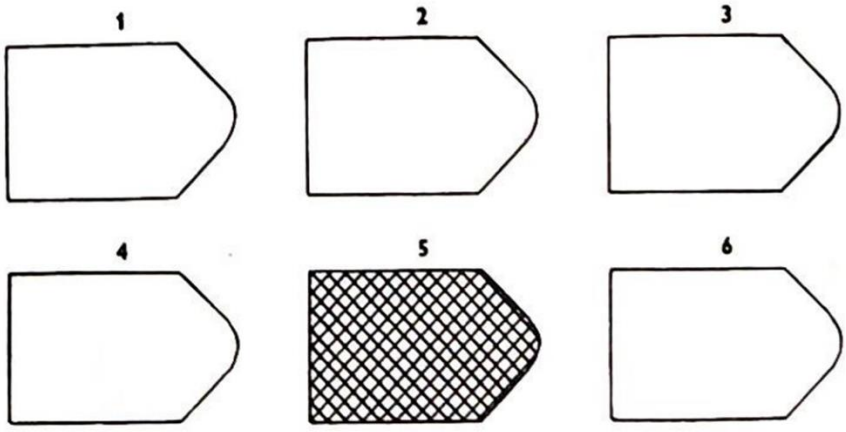
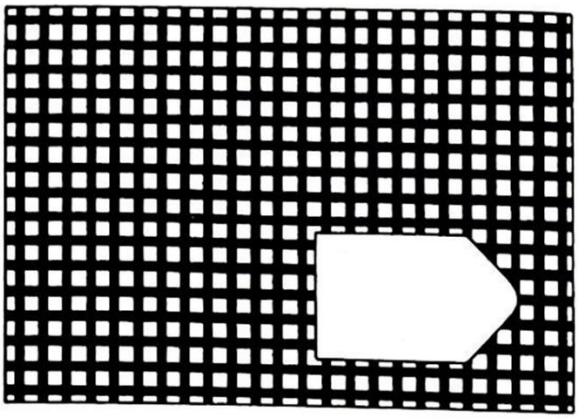
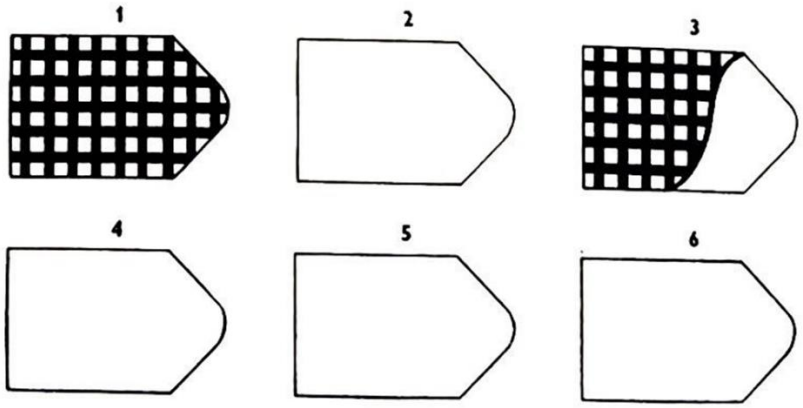




A 3





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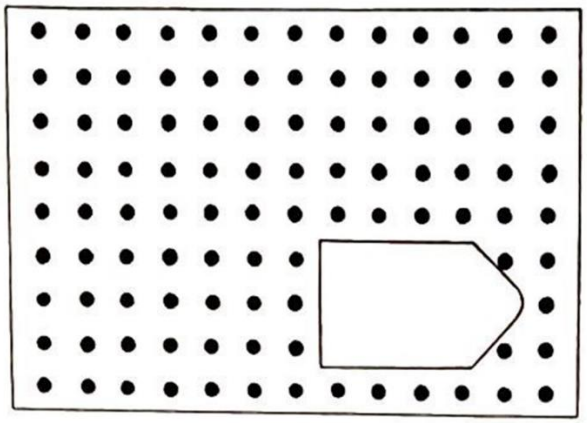

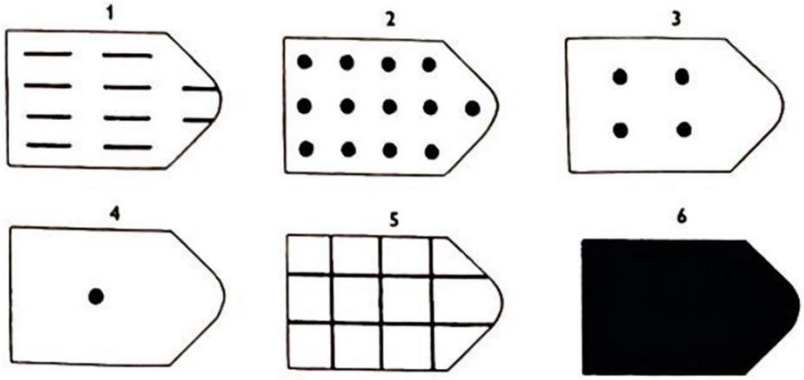

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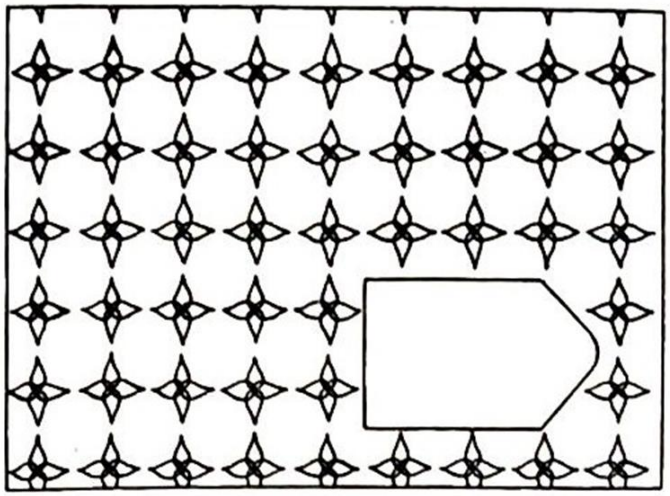

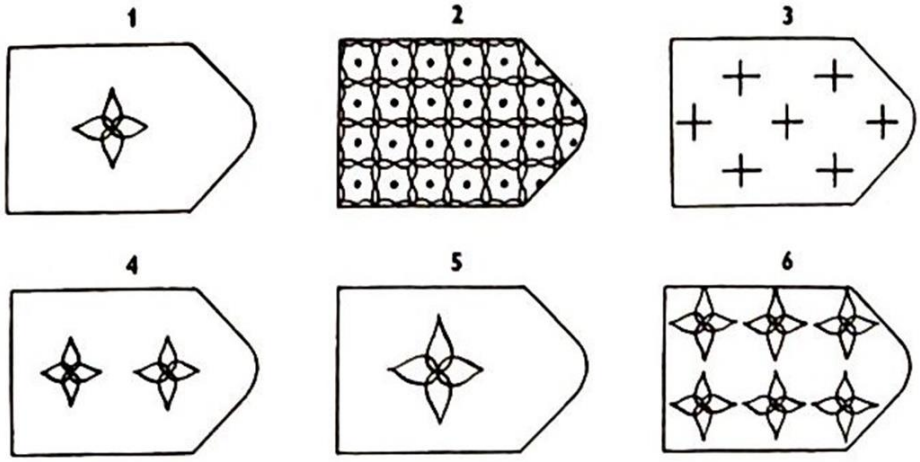

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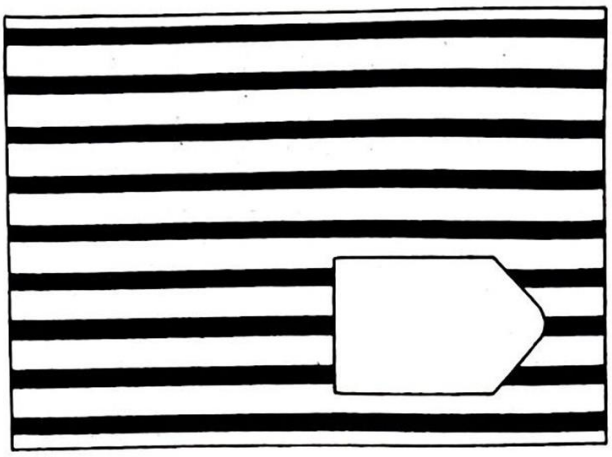

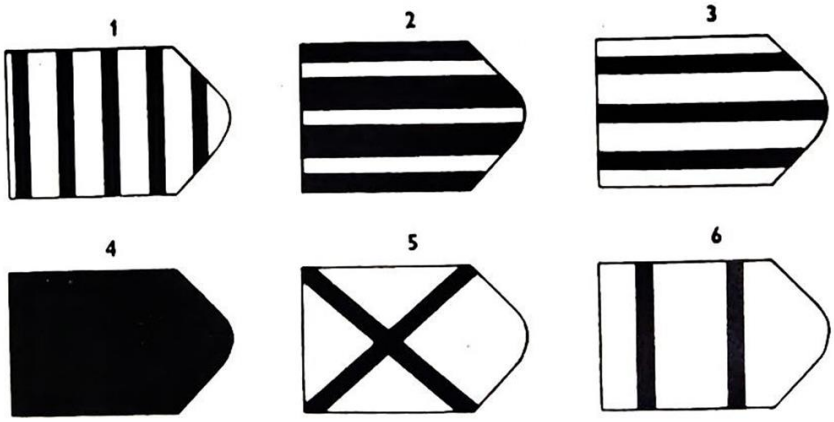

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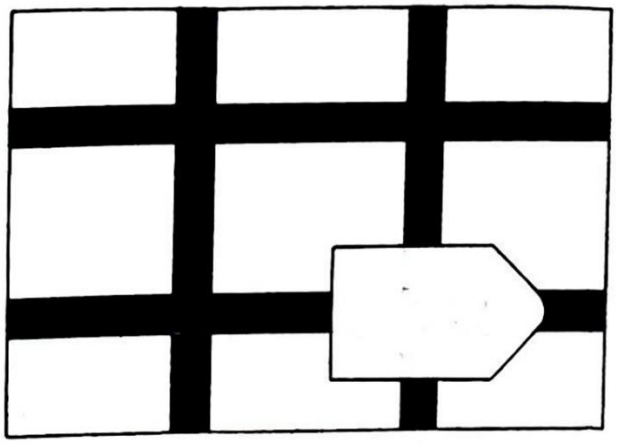

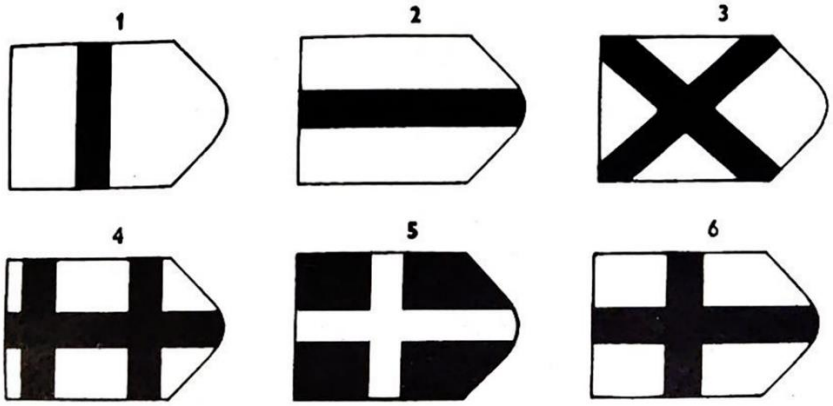

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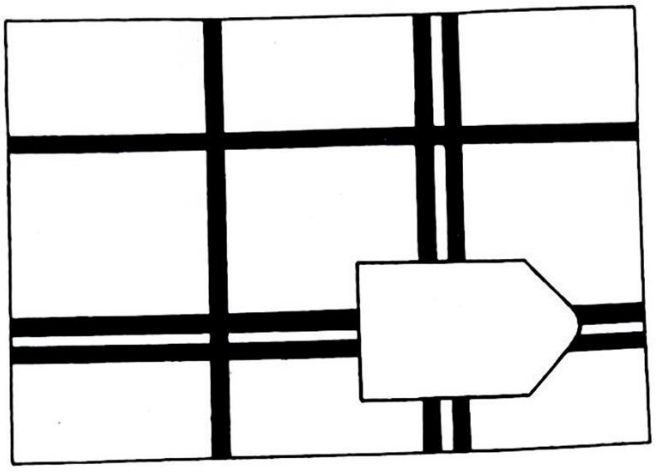

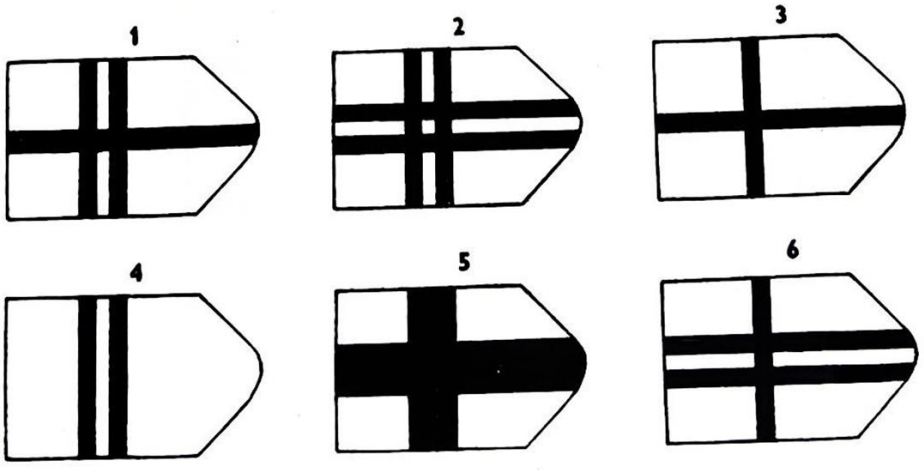

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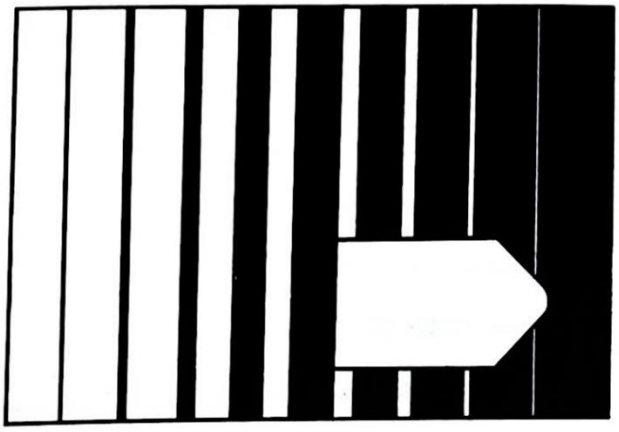
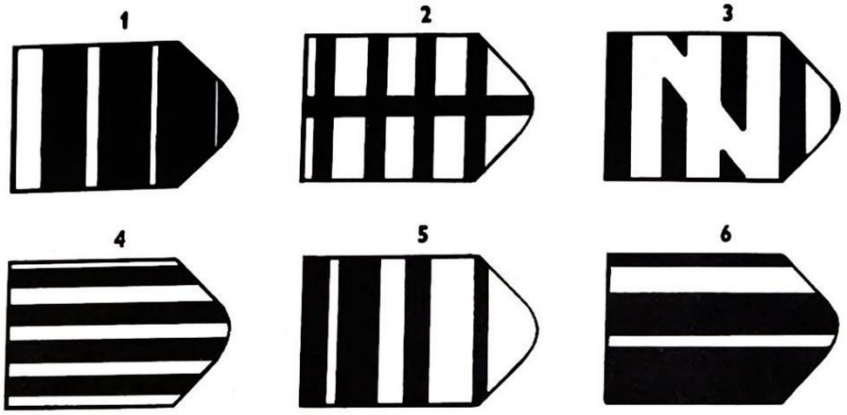
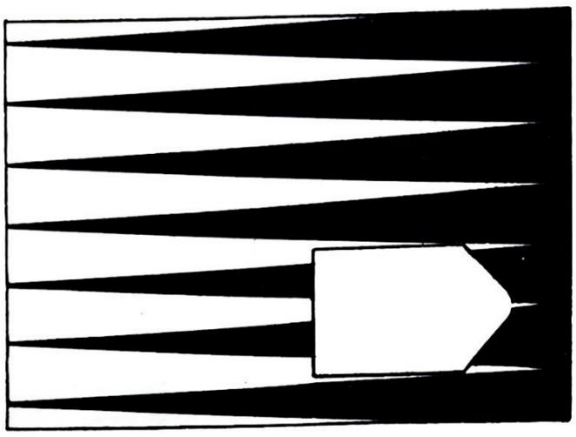
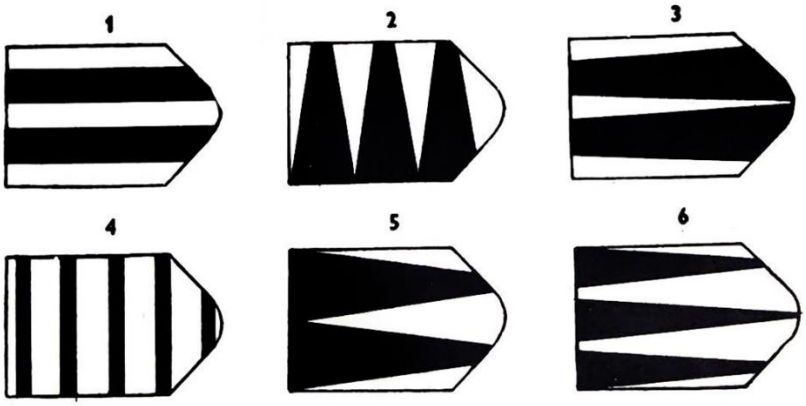


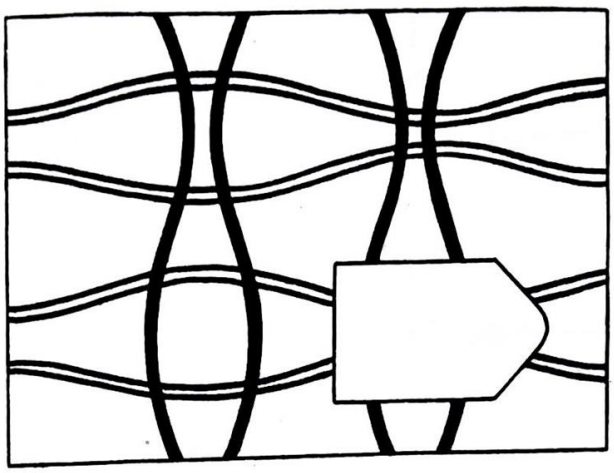


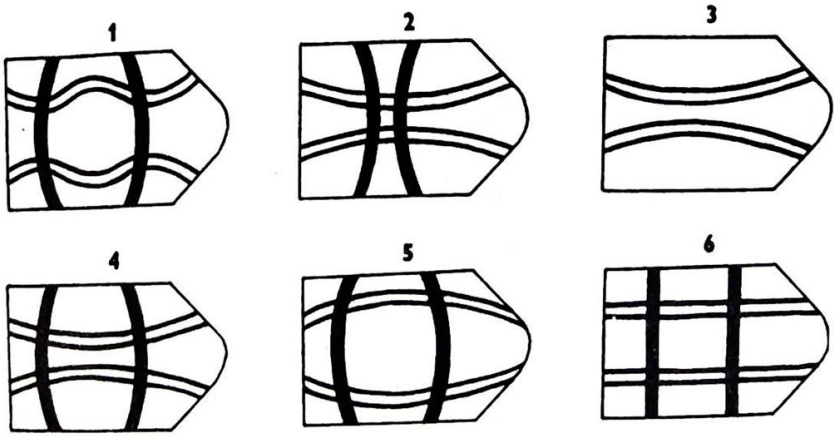
A 10





A II





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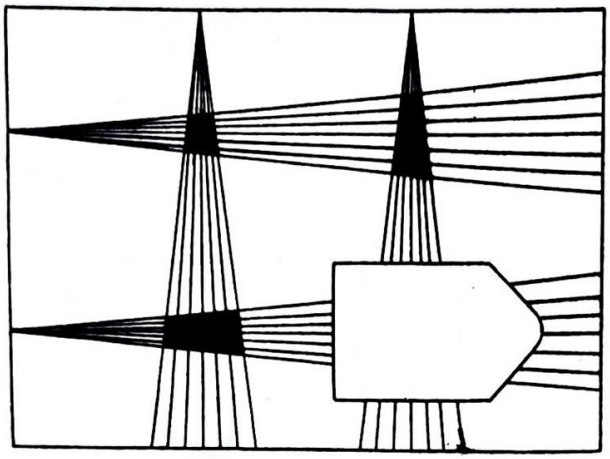
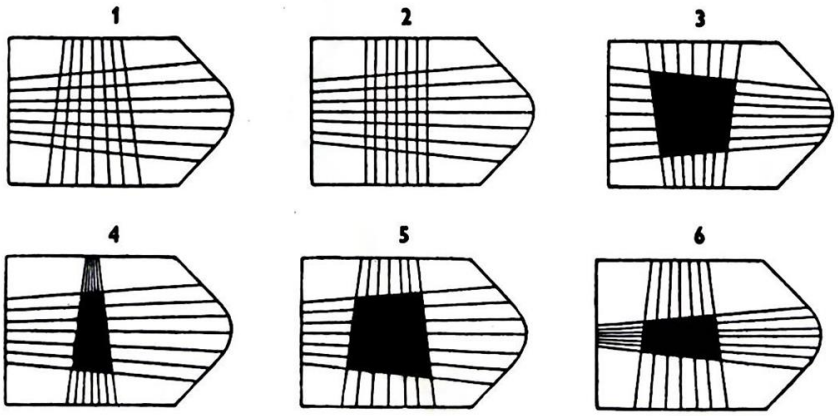
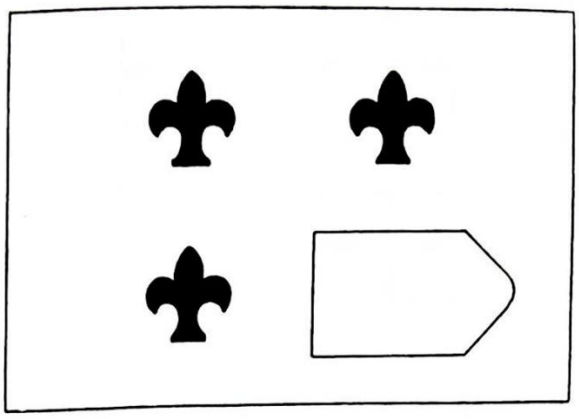
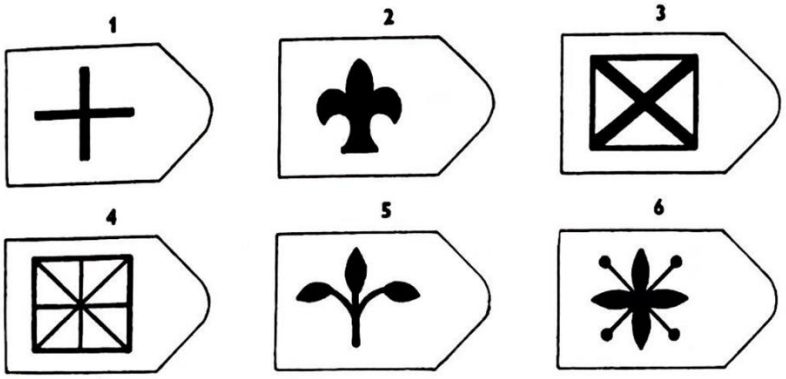




SET B

B 1





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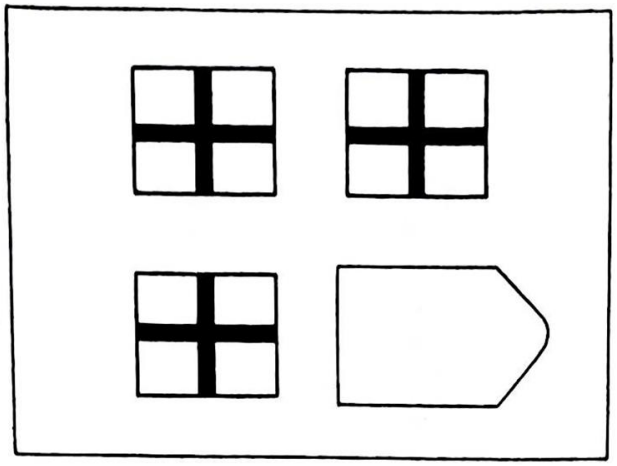
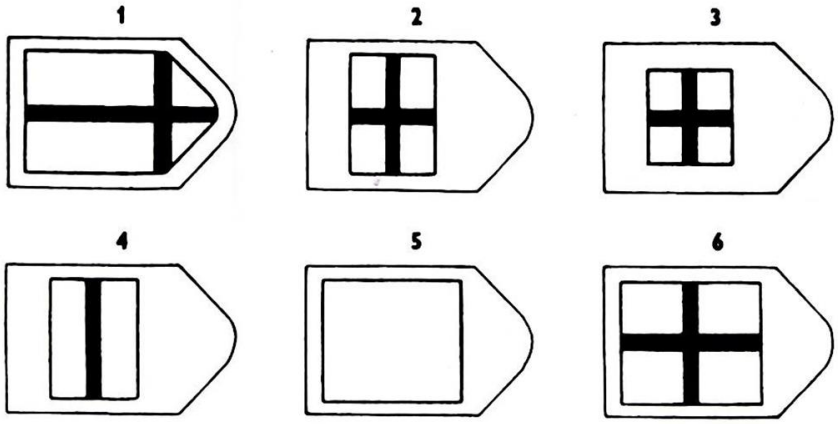
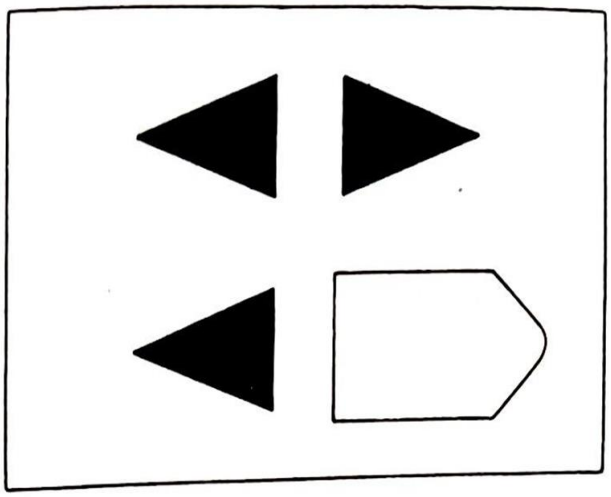
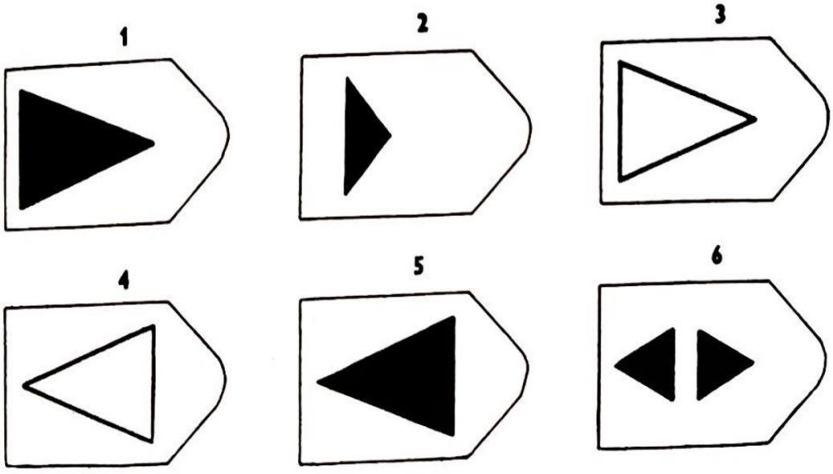




B 3





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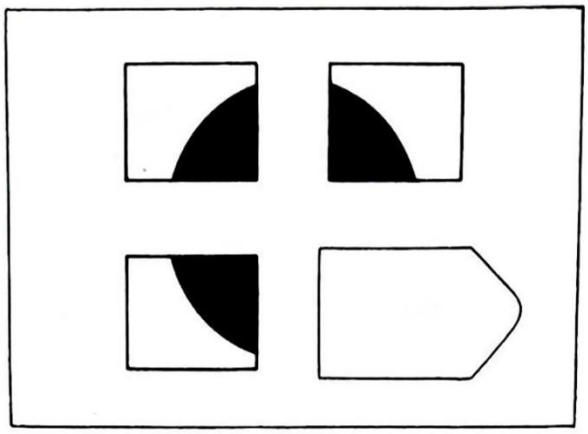

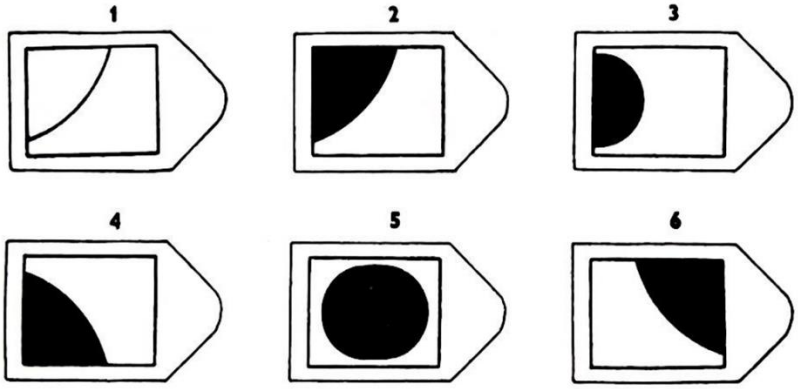

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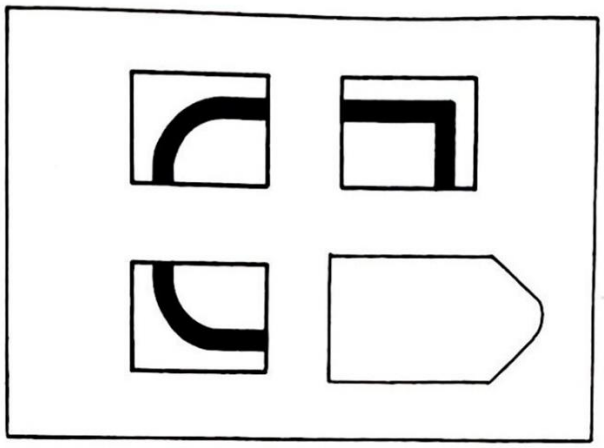
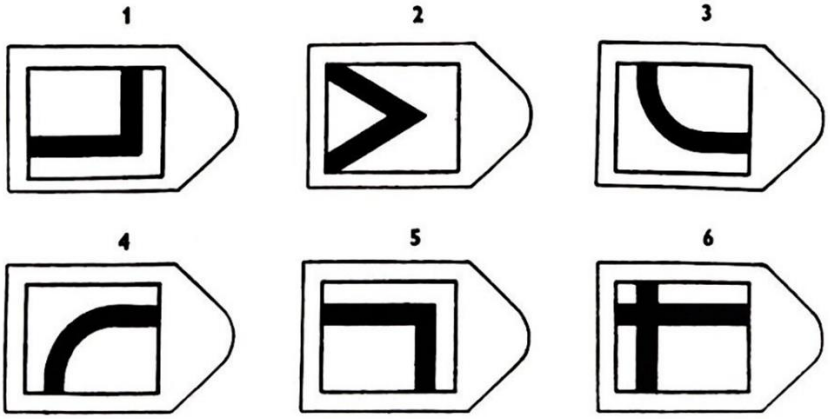
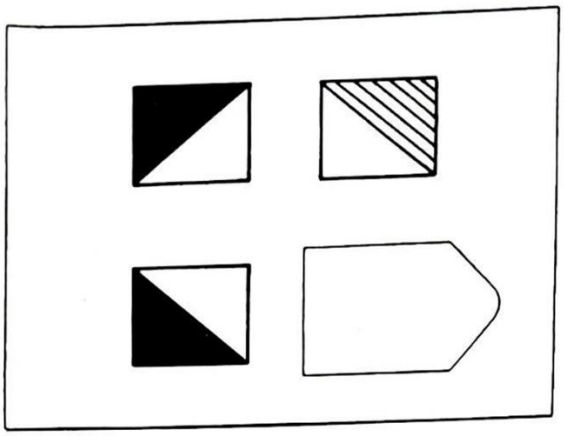
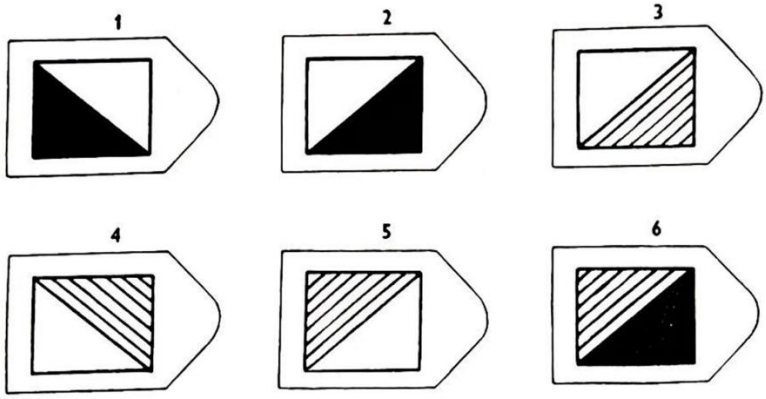


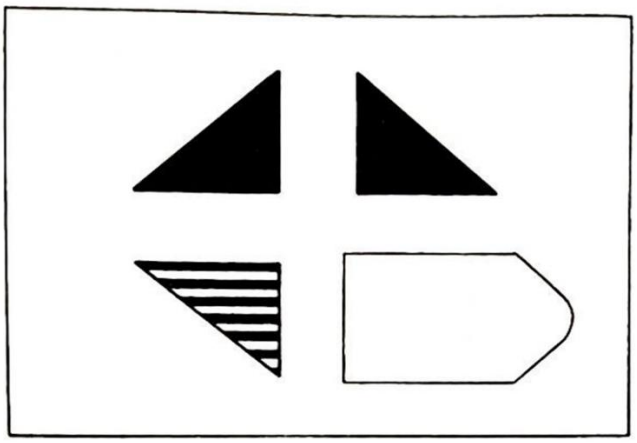


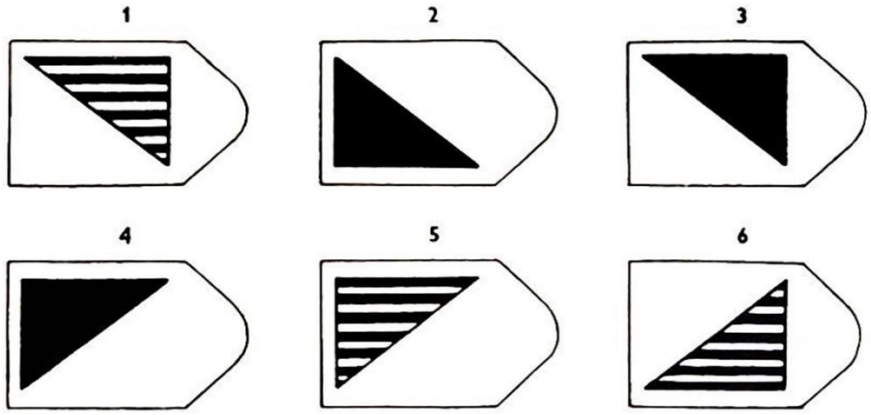
B6



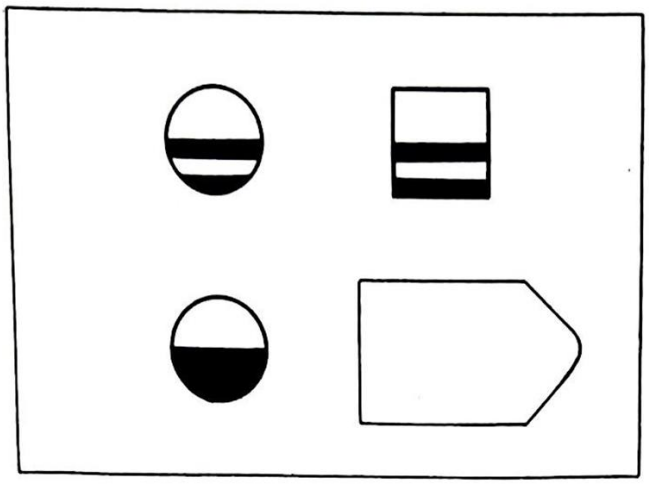


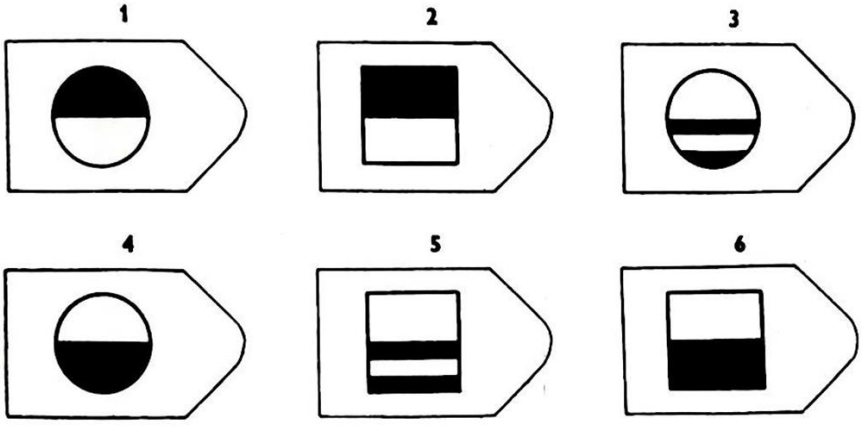
B 7



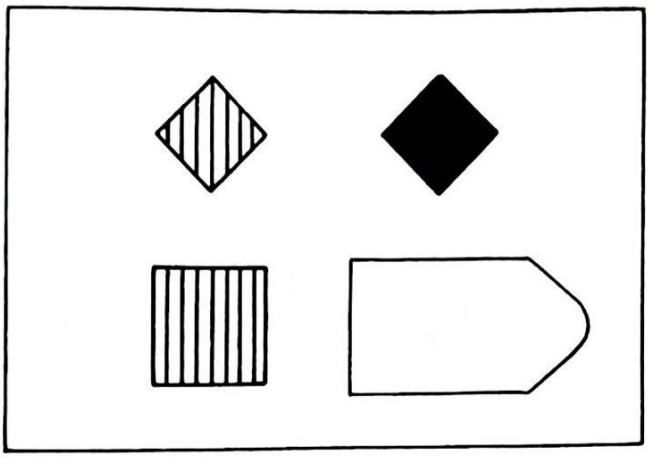


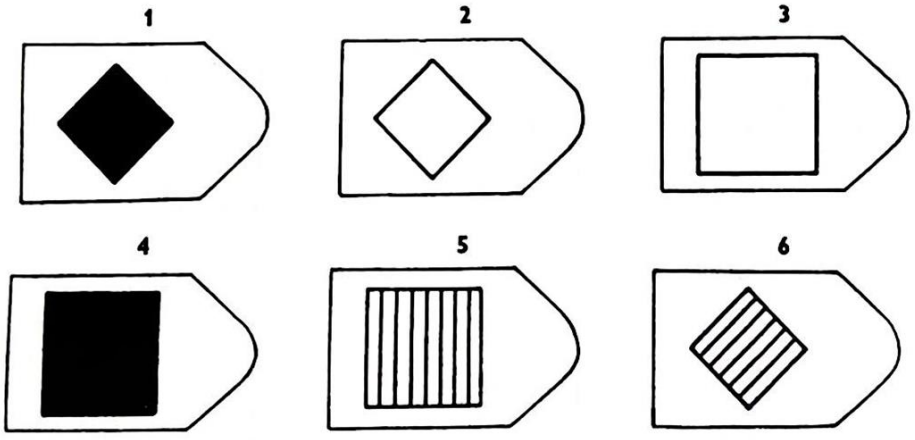
B 8



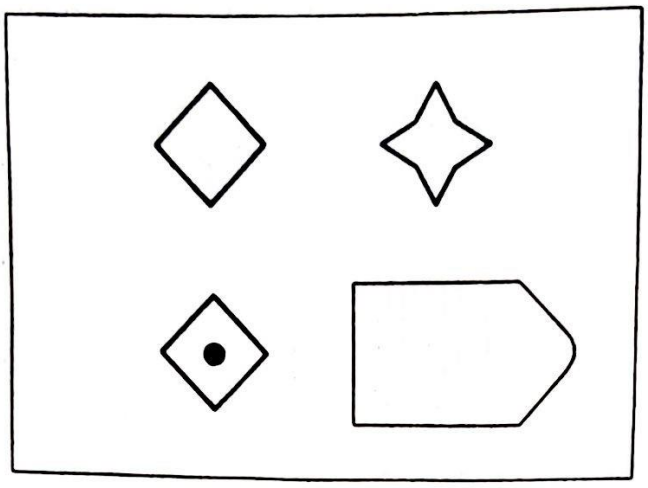


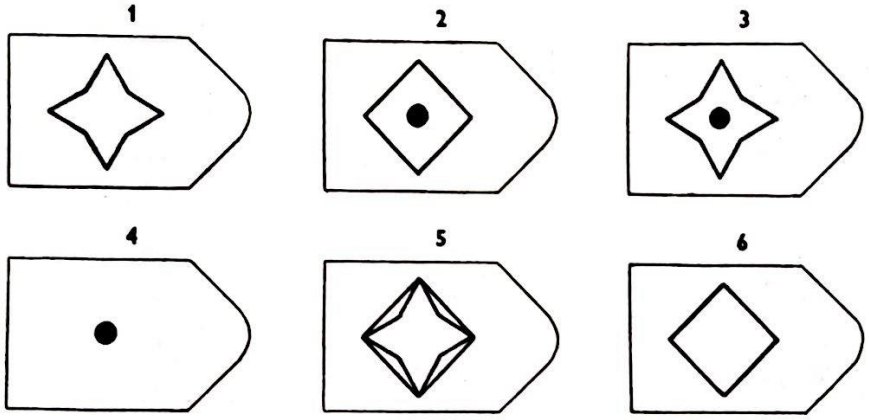
B9



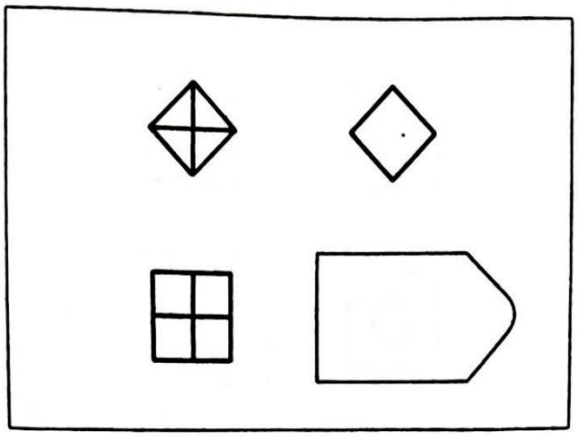


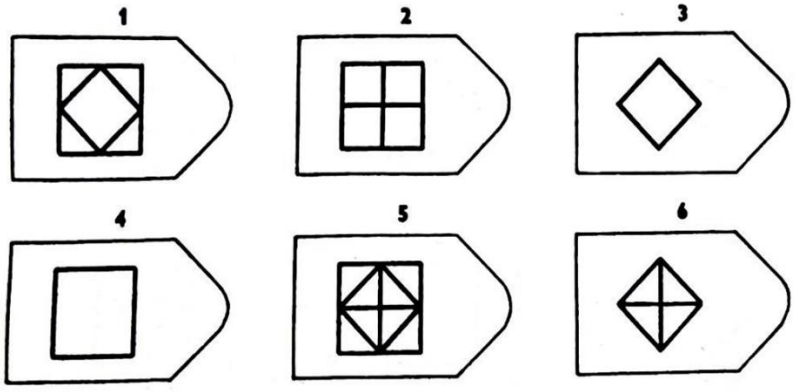
B 10



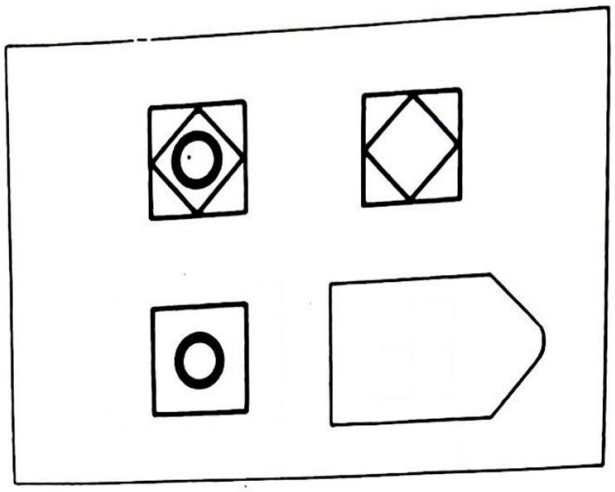


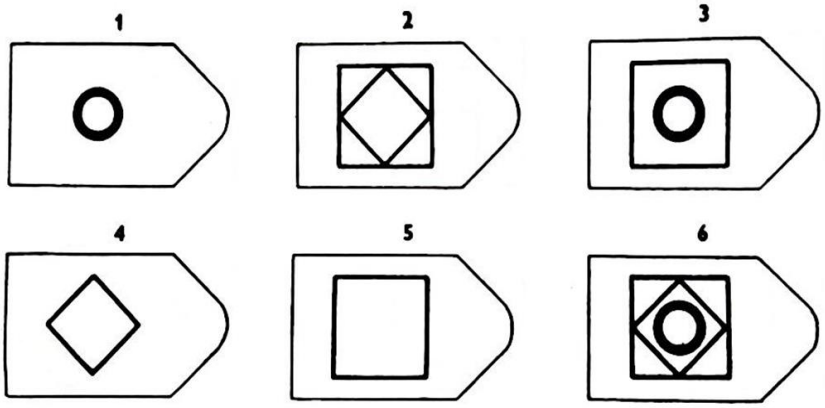
B II





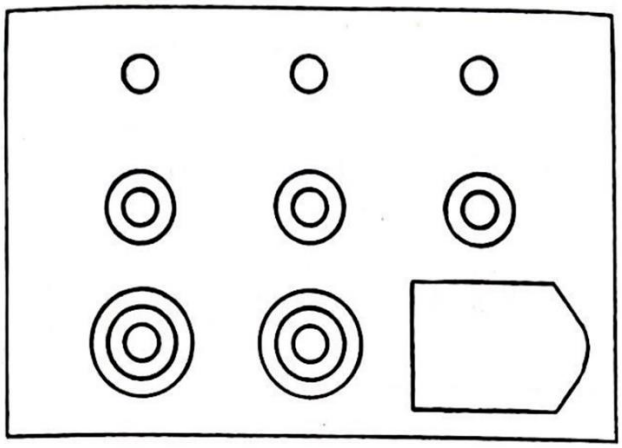
B 12

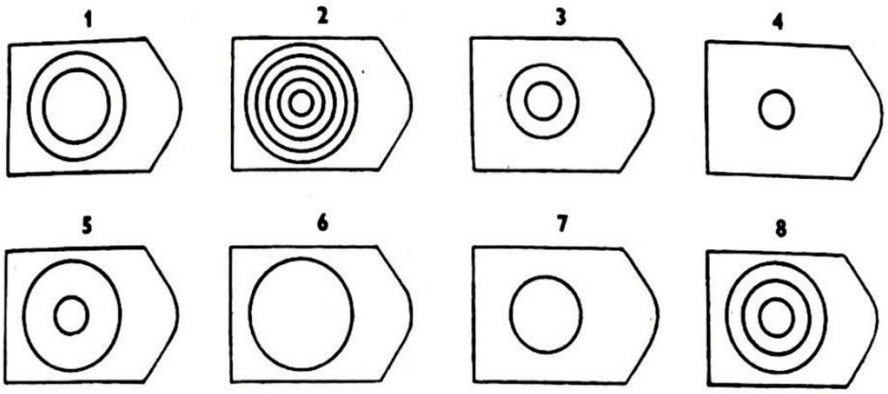




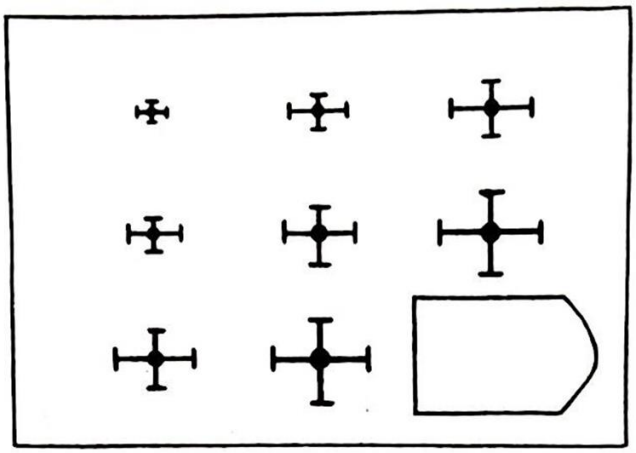
SET C

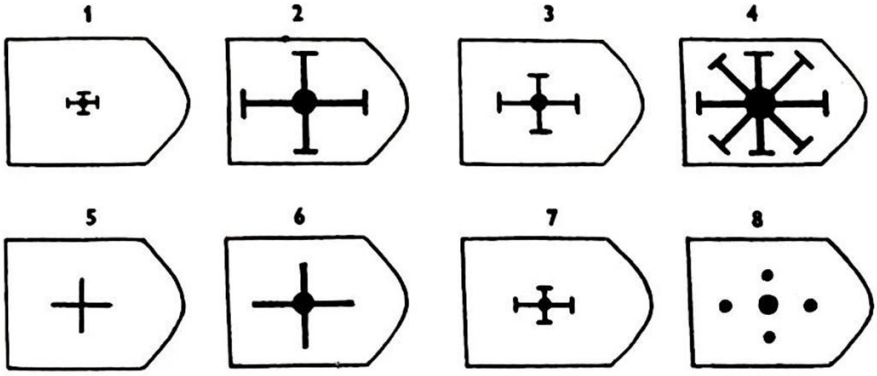
C1



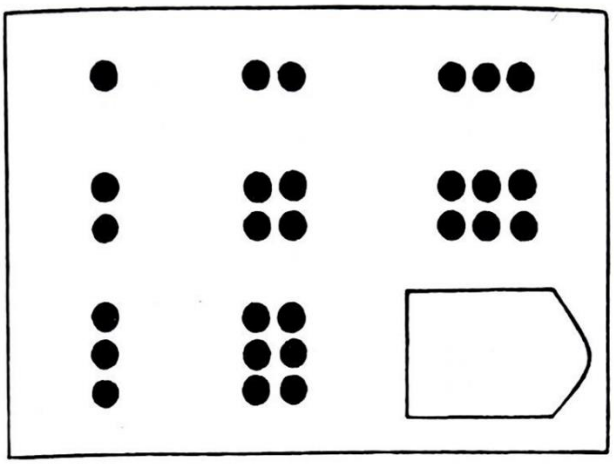


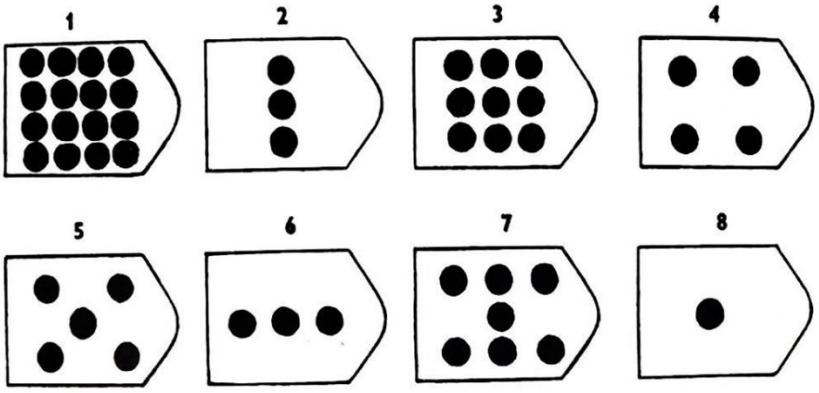
C 2





C3





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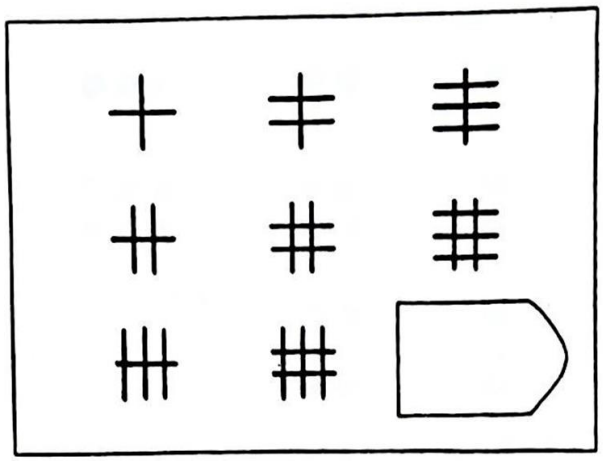

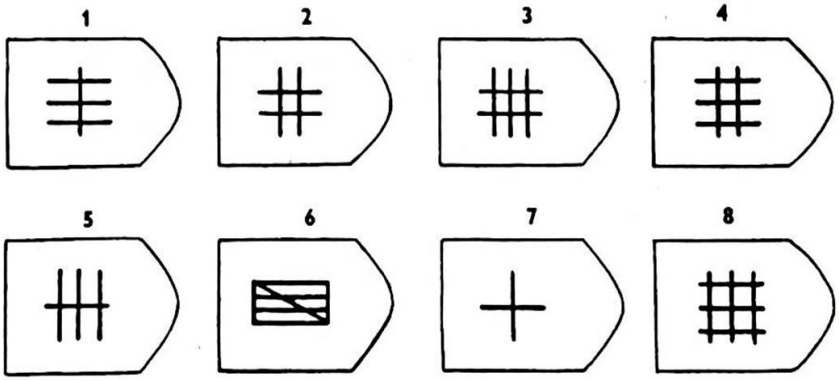

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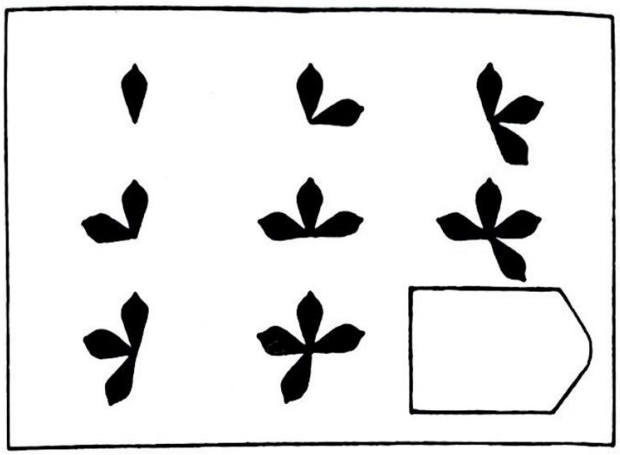
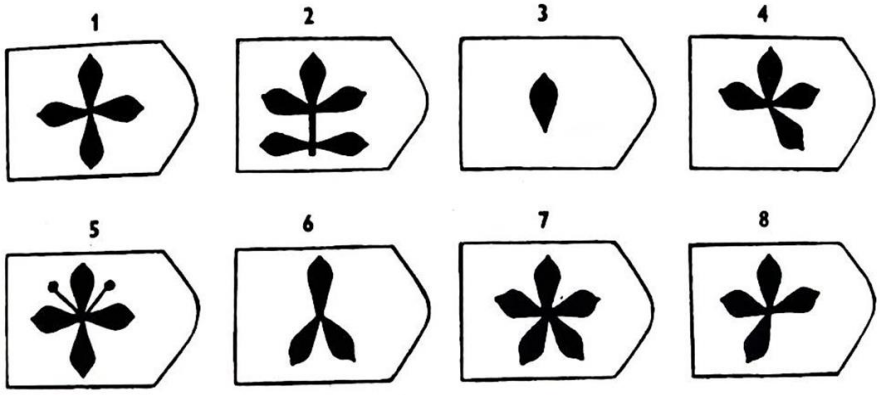
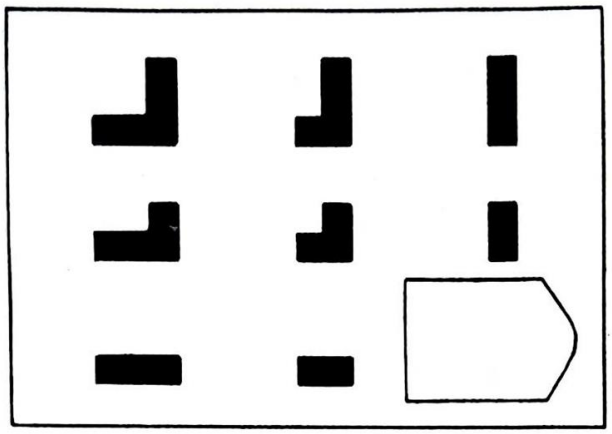
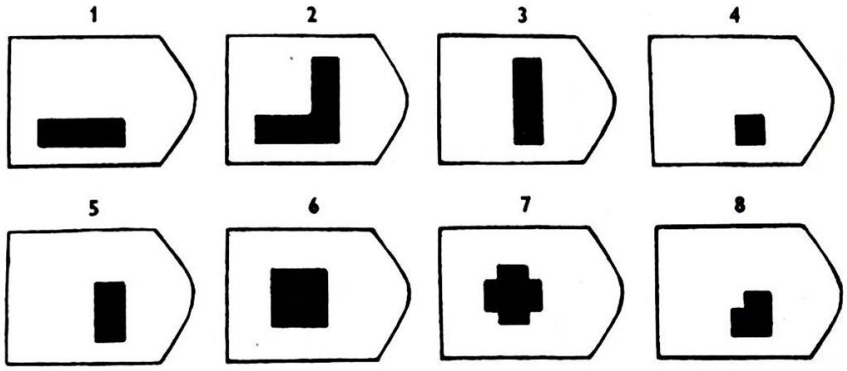


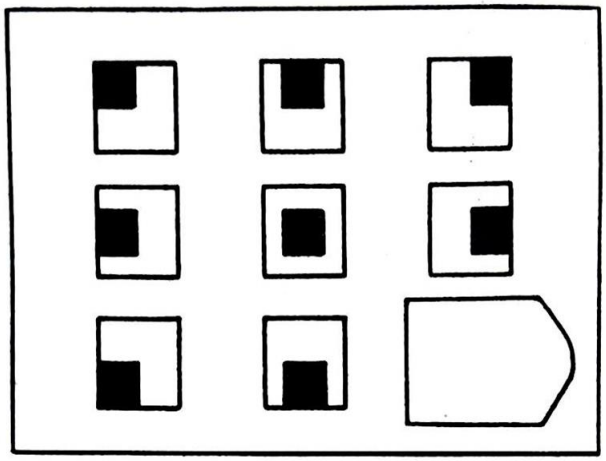


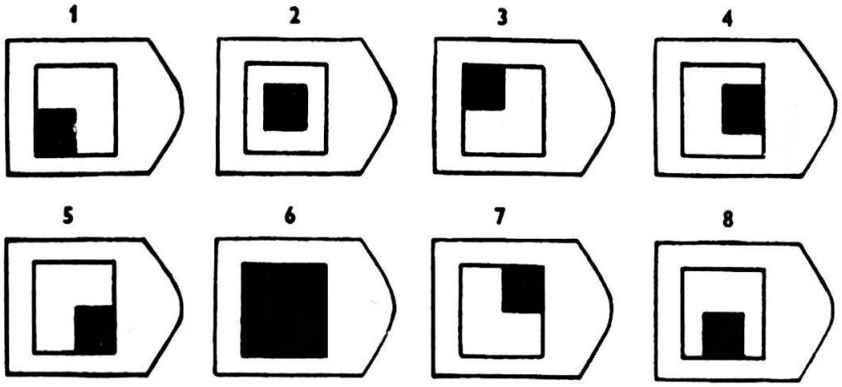
C6





C_7





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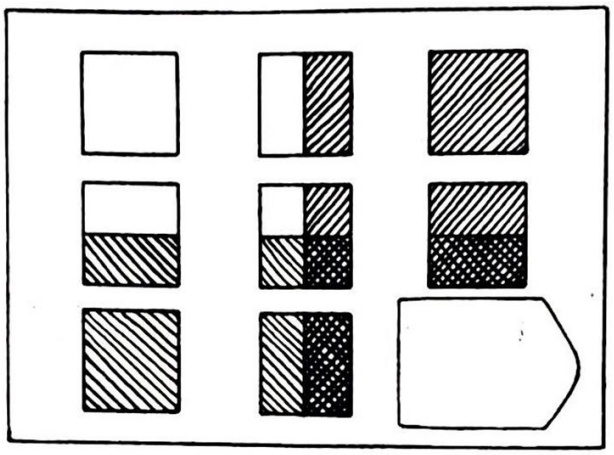
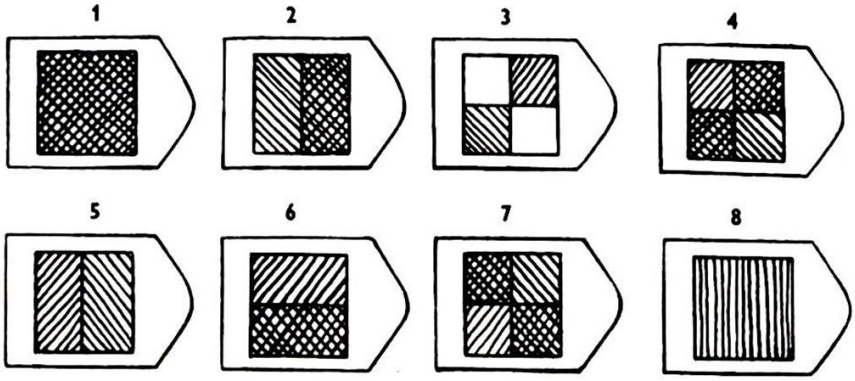
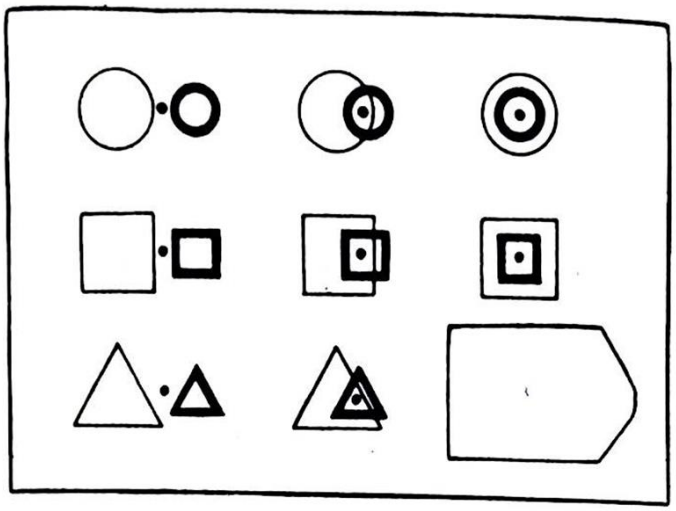
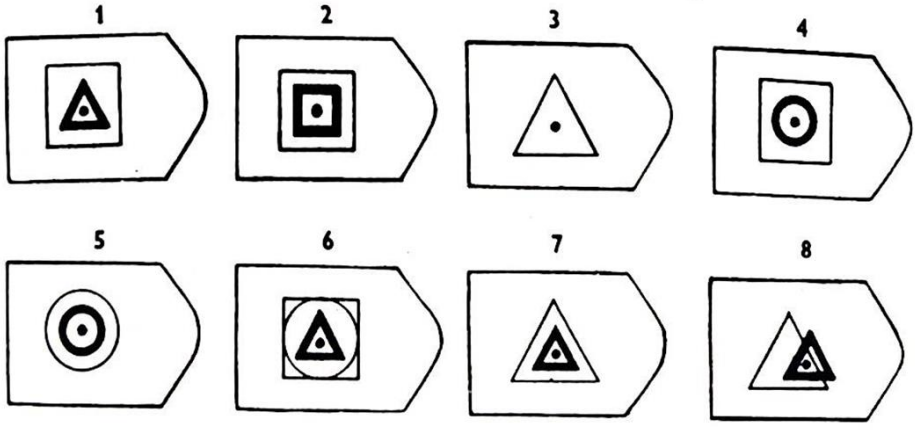
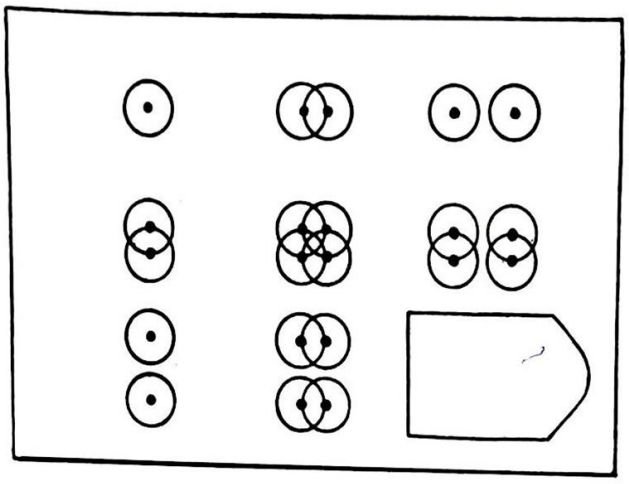


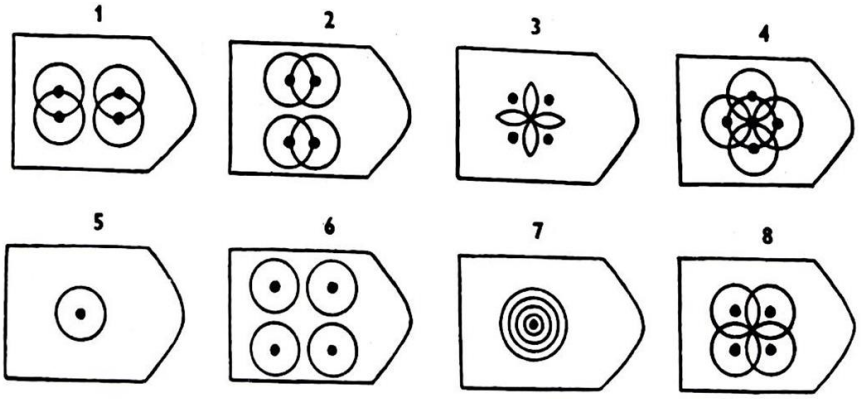


C9

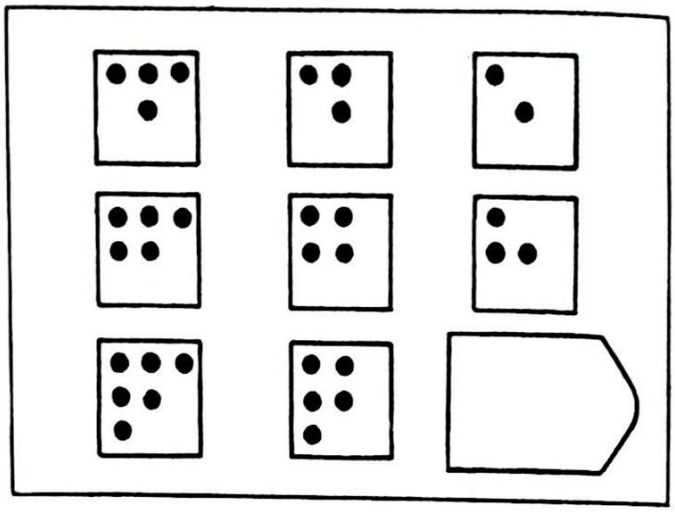


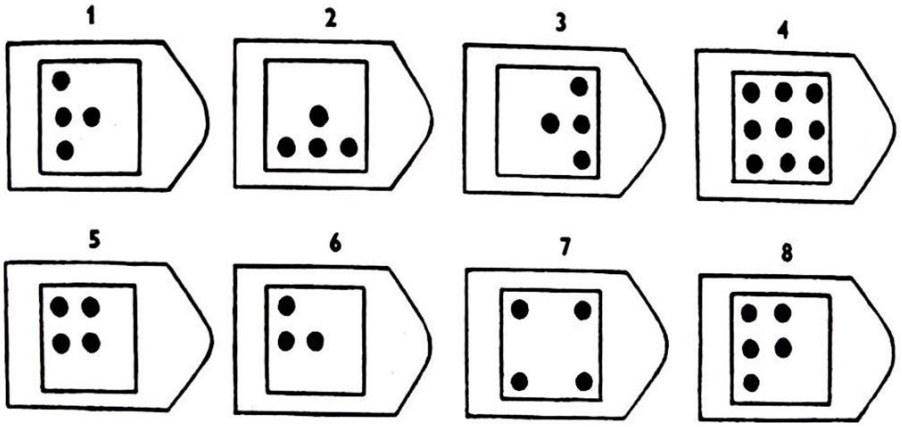




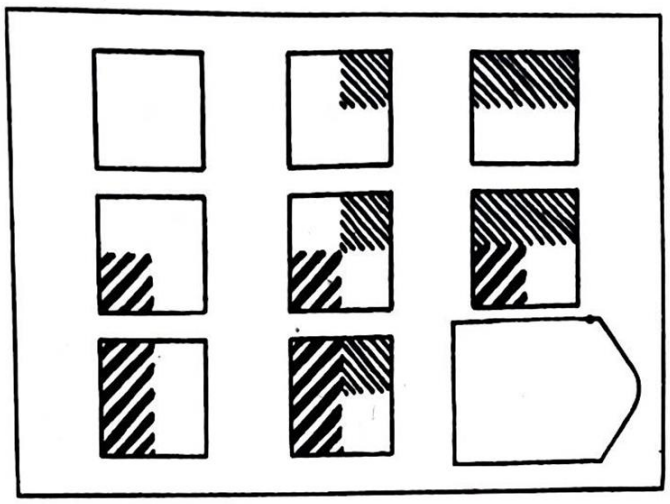

1
2
3
4
5
6
7
8

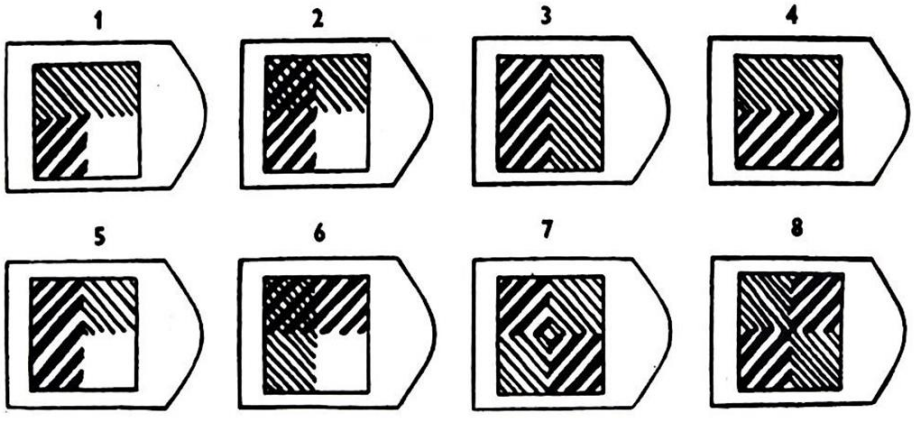
C II





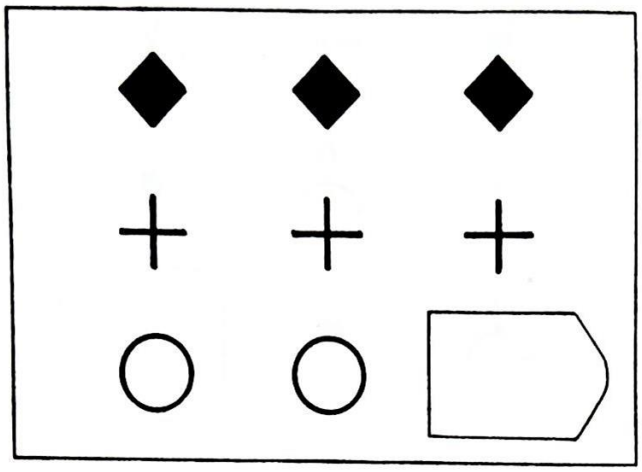
C12

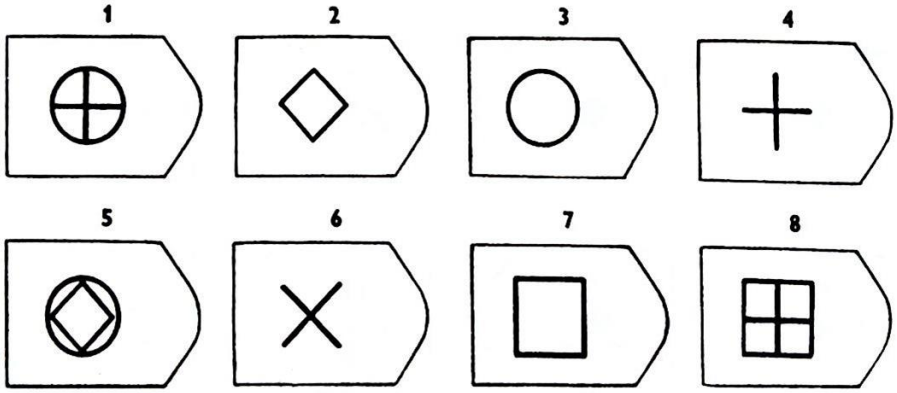




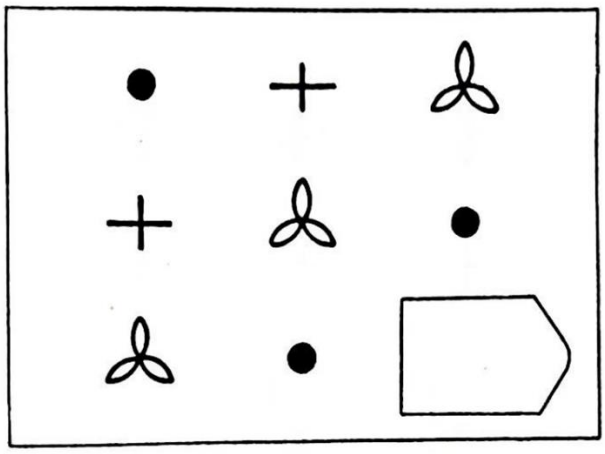
SET D

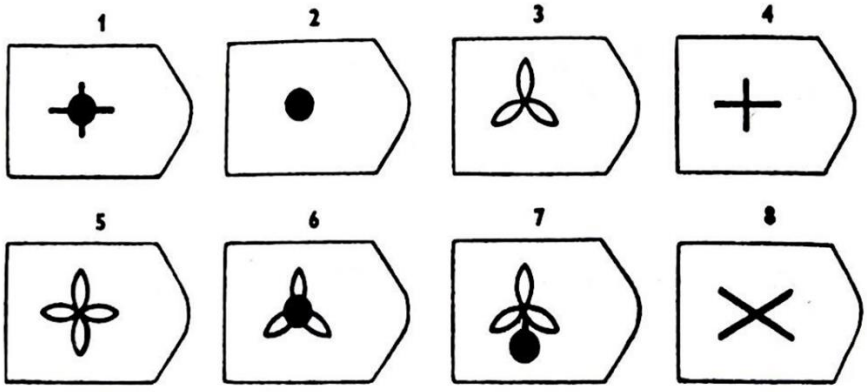
D 1



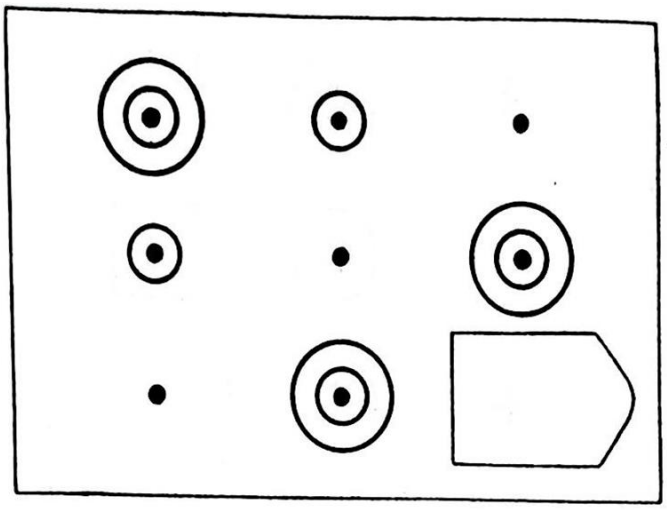


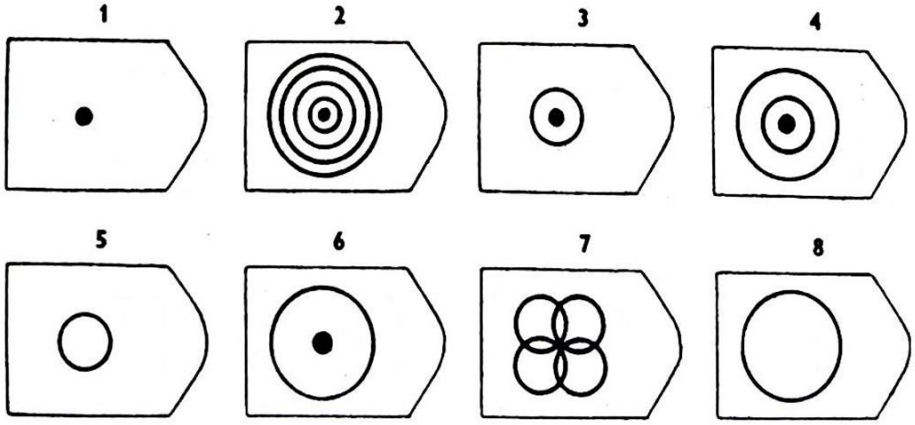
D2





D 3





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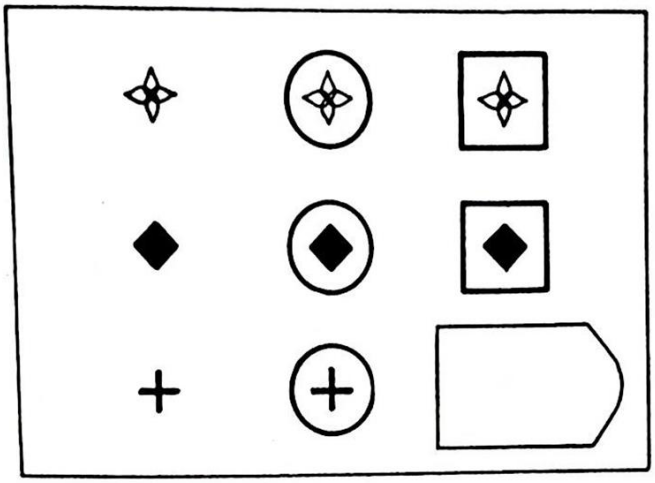

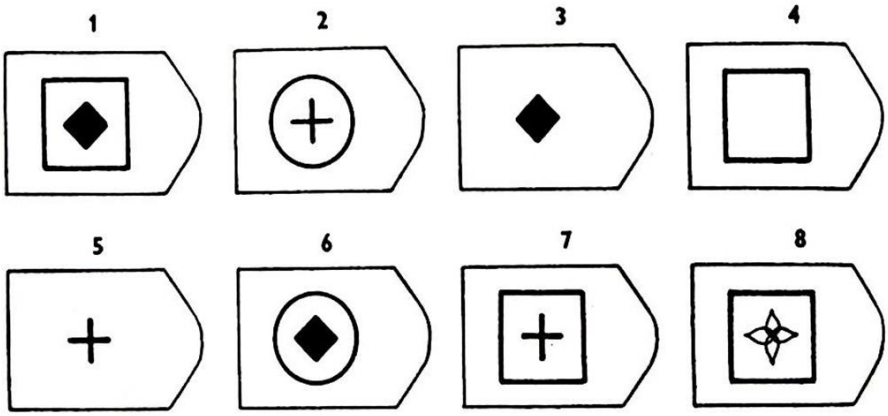

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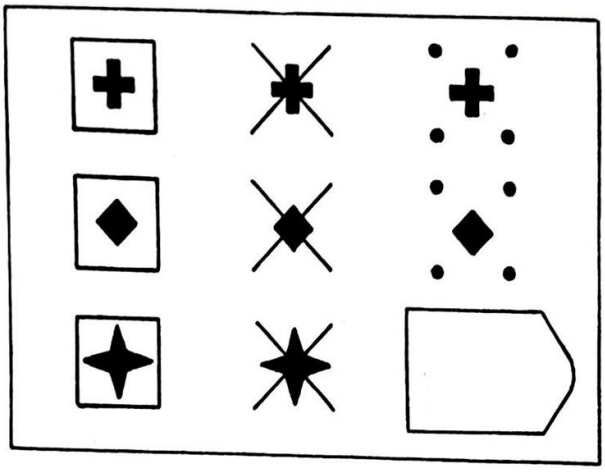

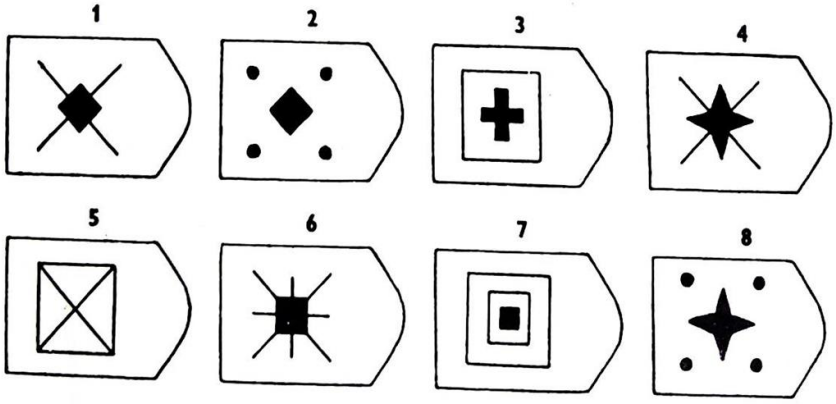

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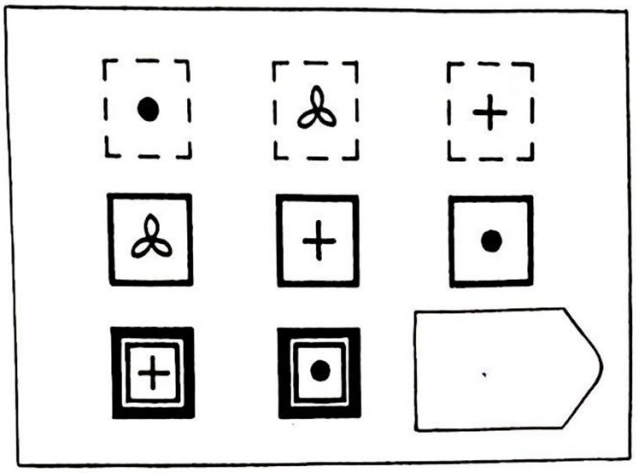

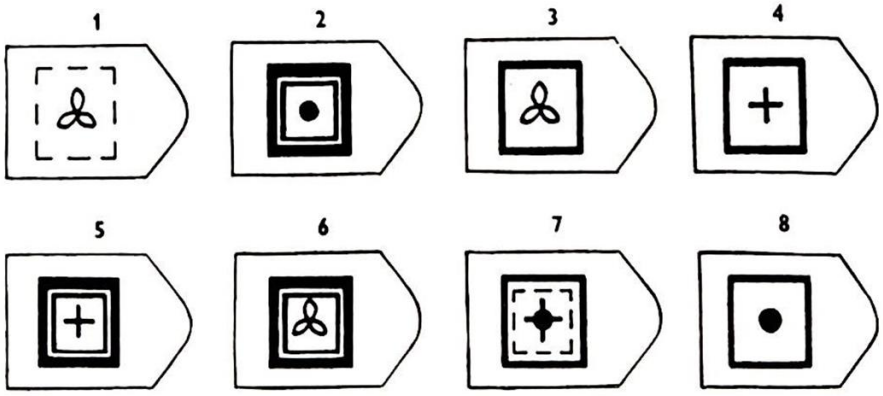

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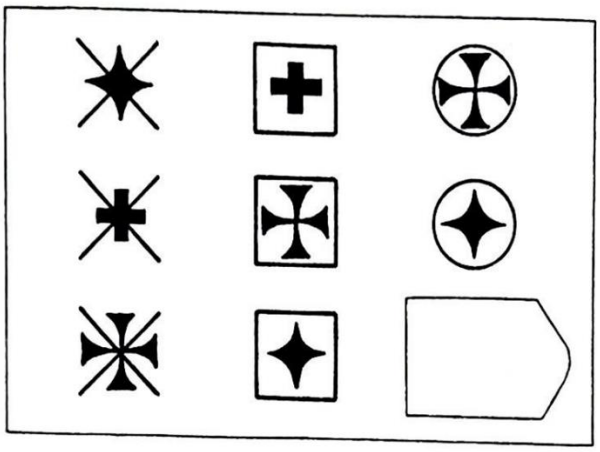

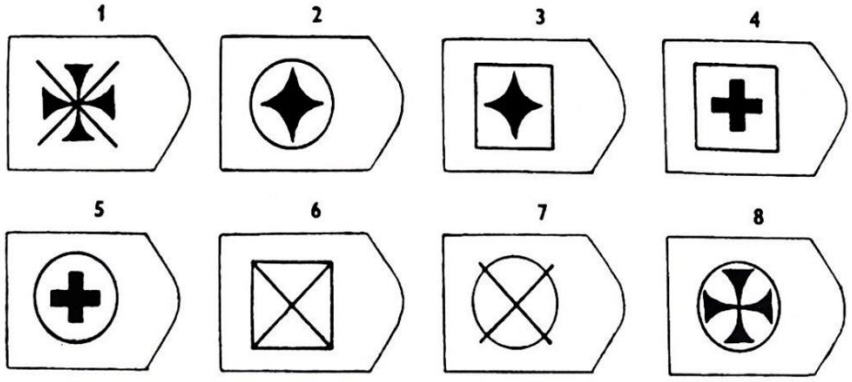

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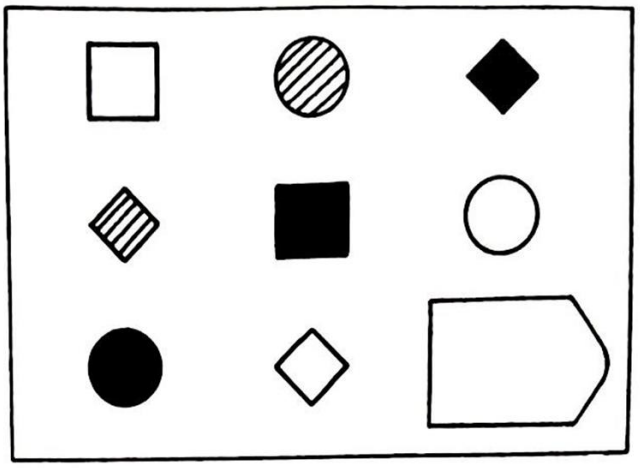

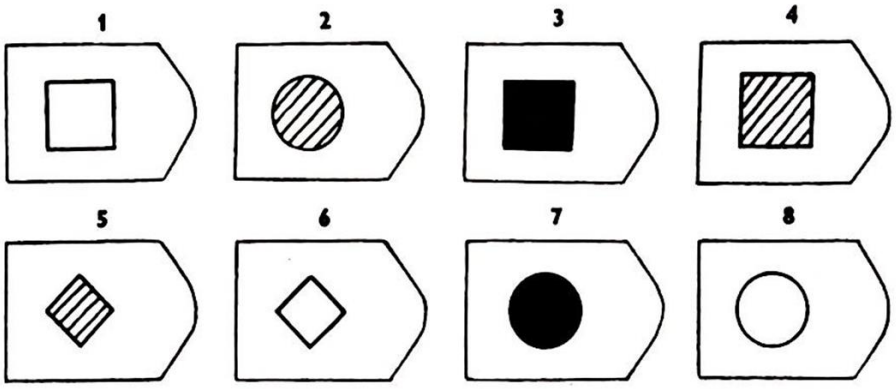

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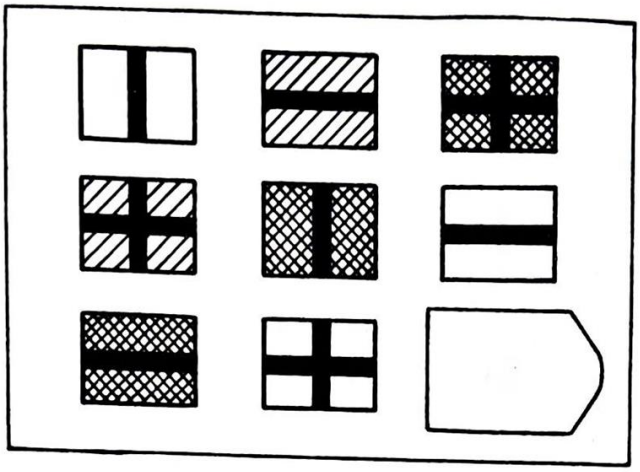

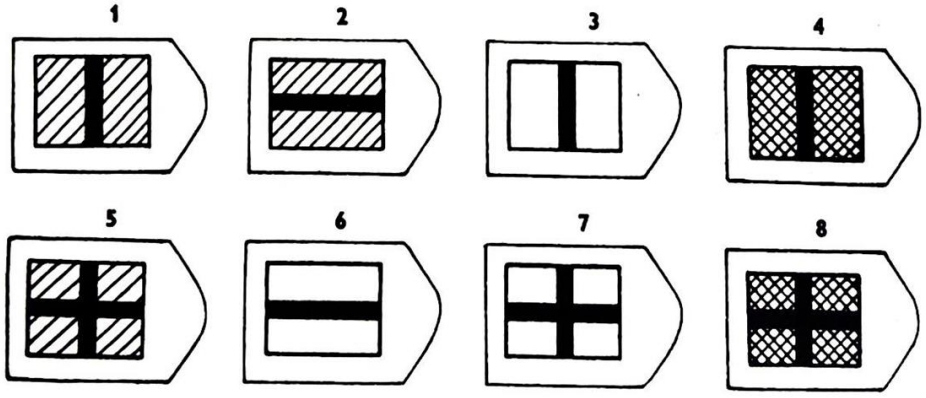

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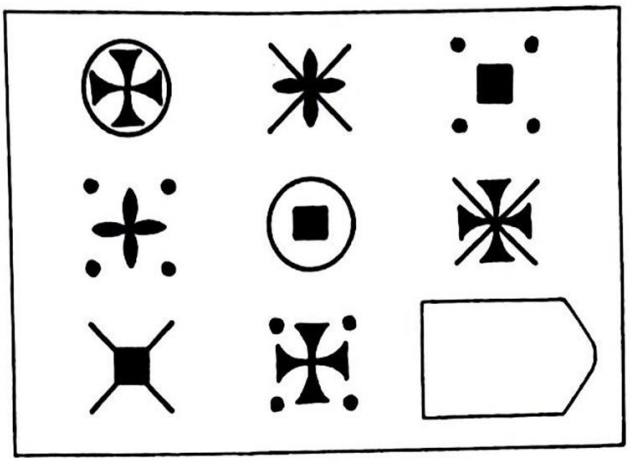

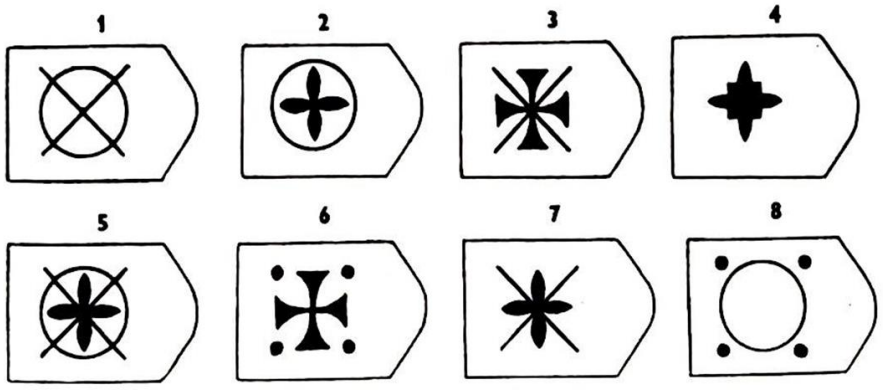

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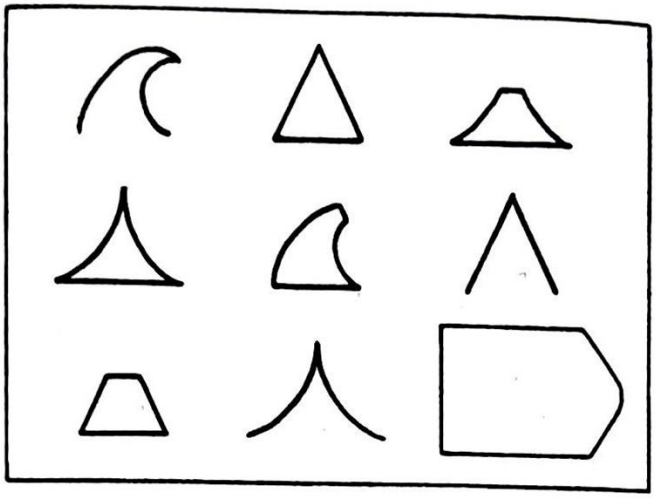

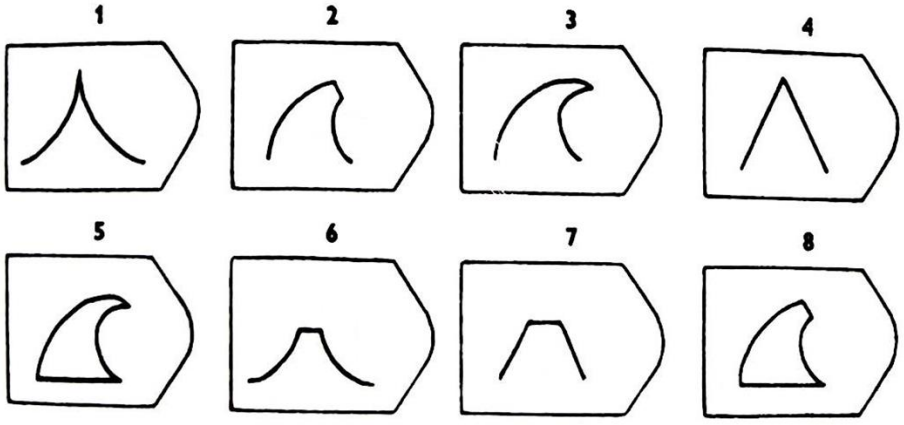

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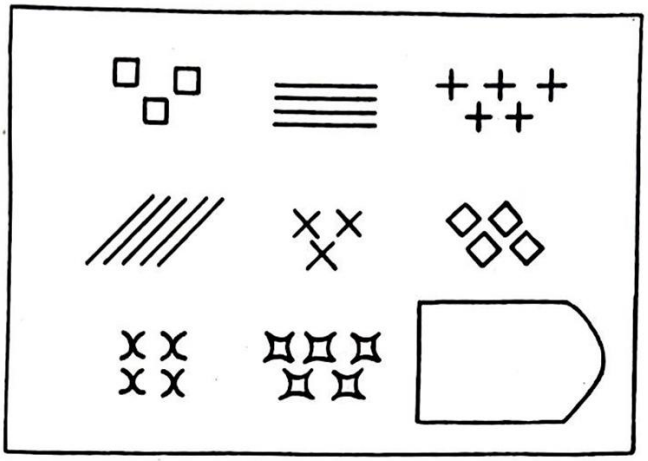

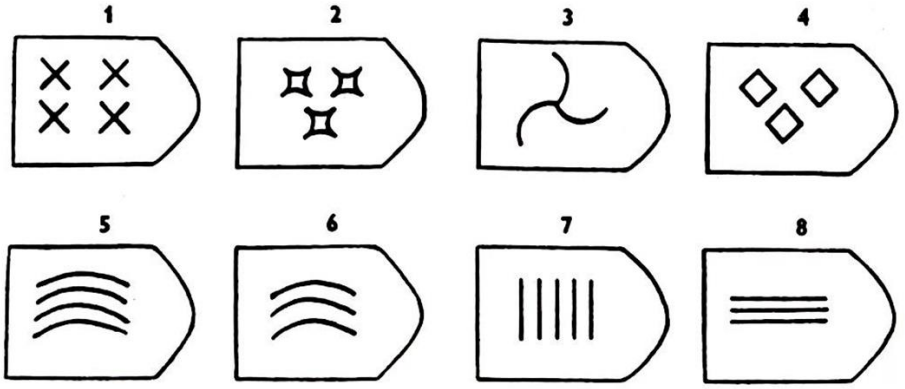

SET E

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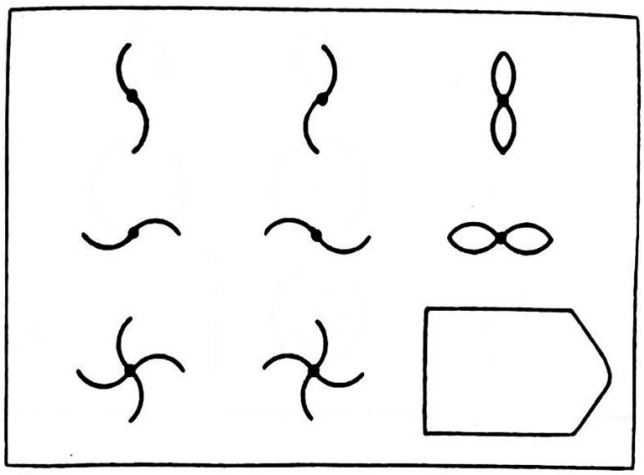

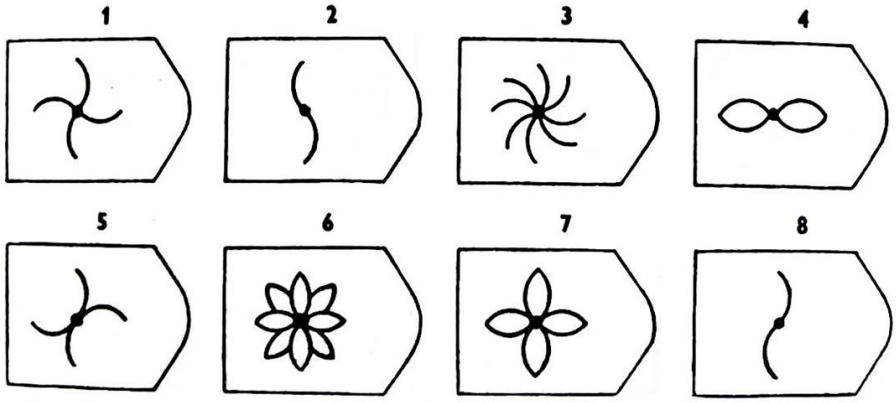

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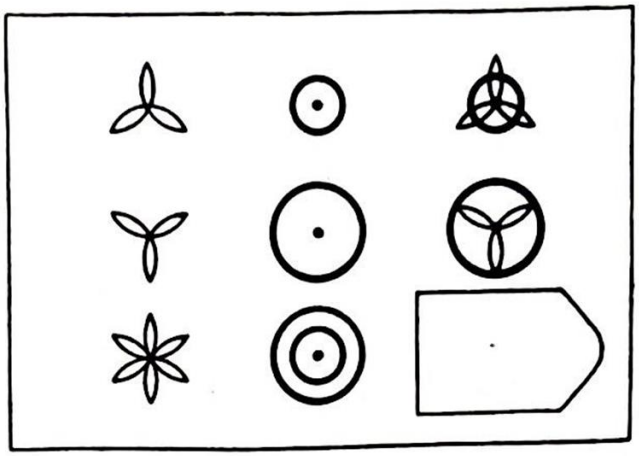

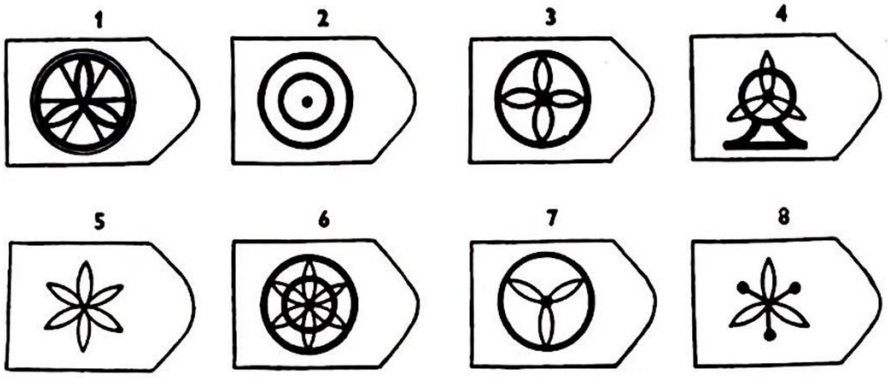

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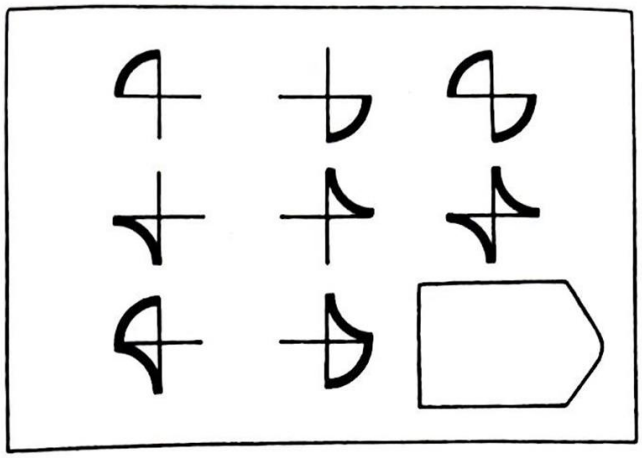

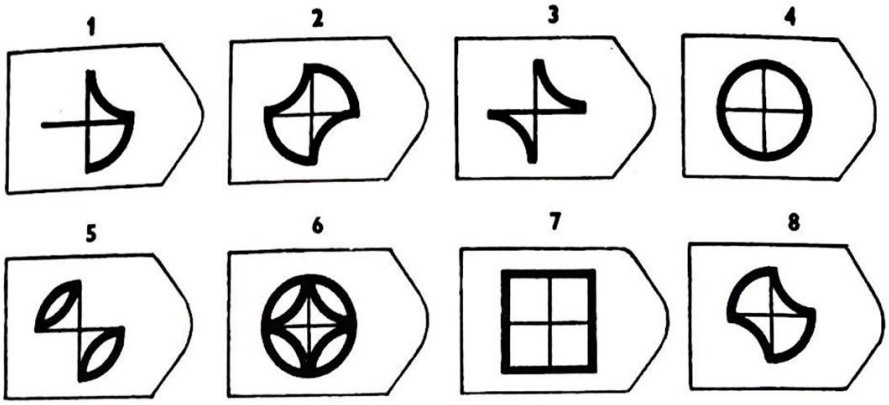

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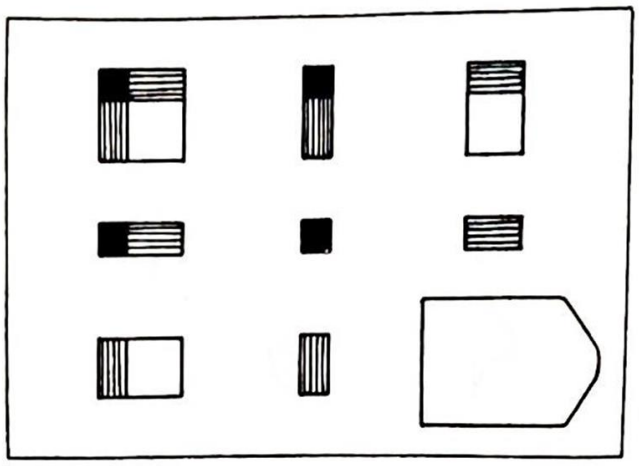

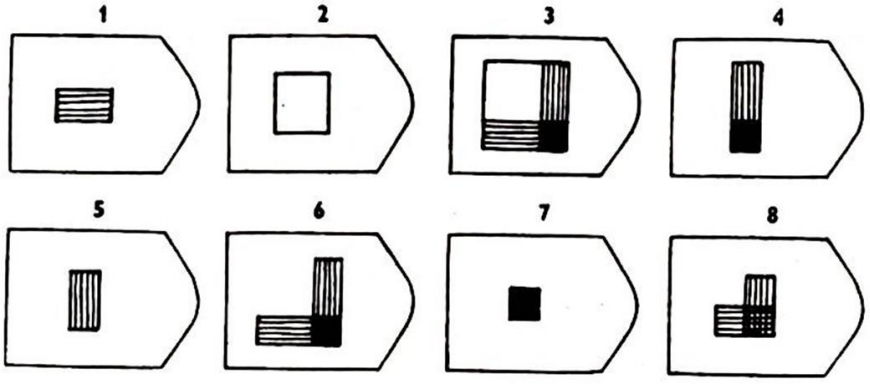

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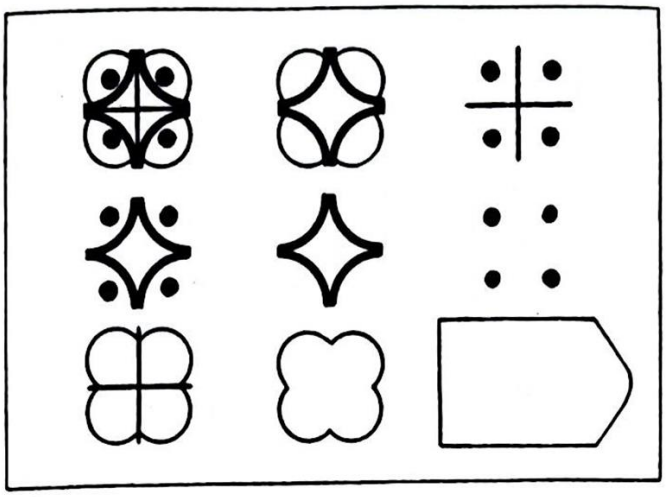

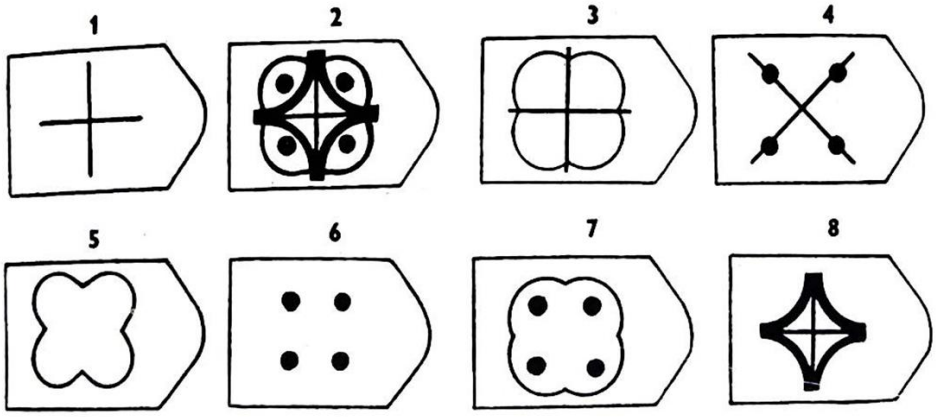

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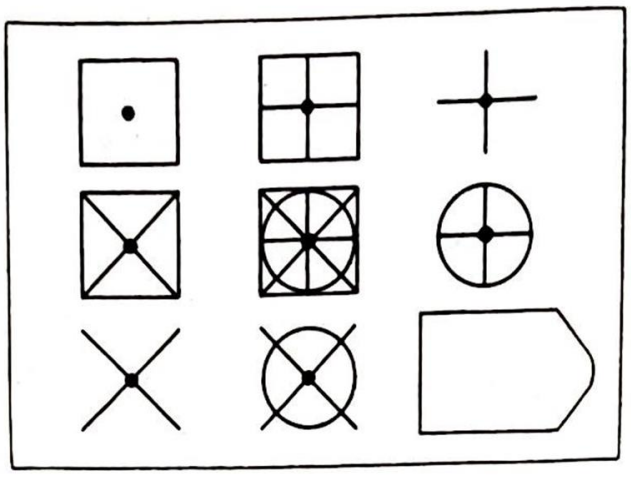

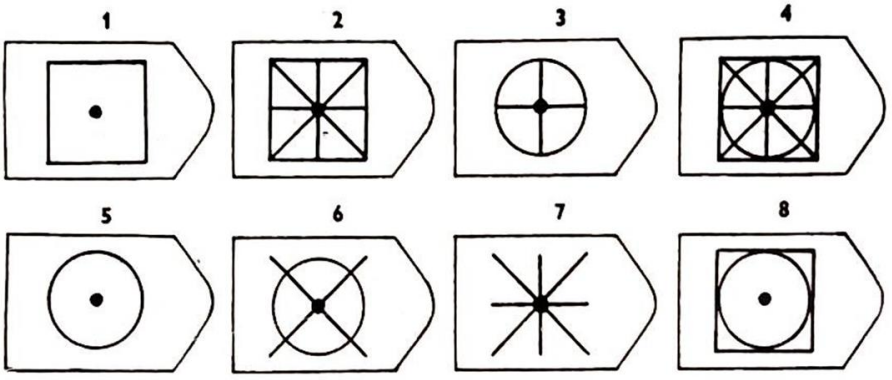

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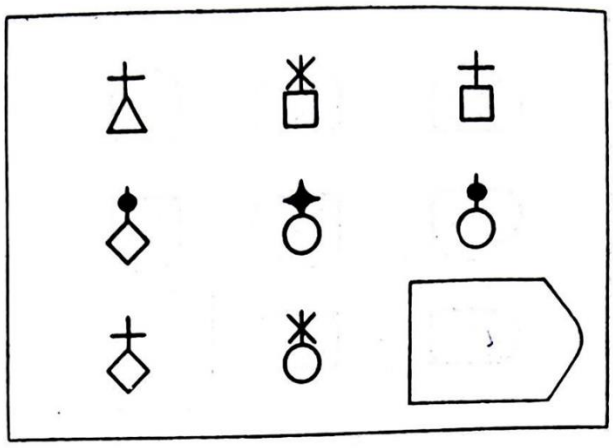

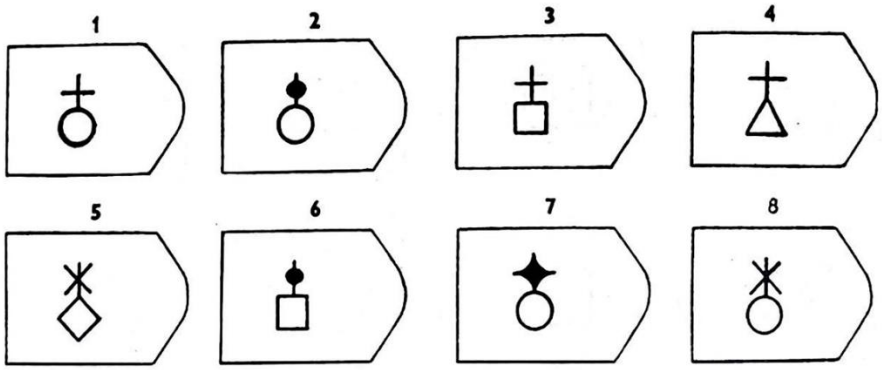

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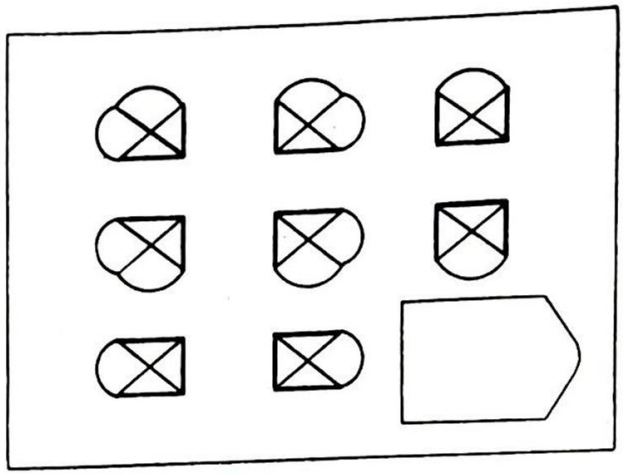

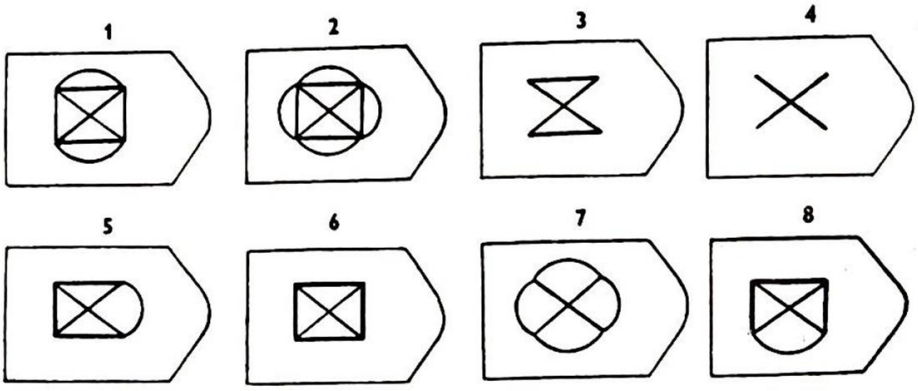

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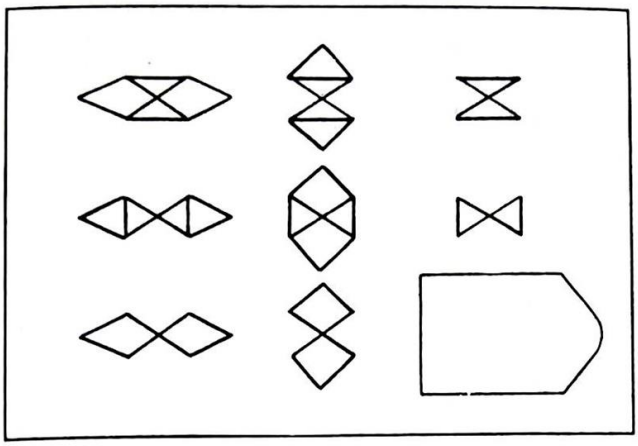

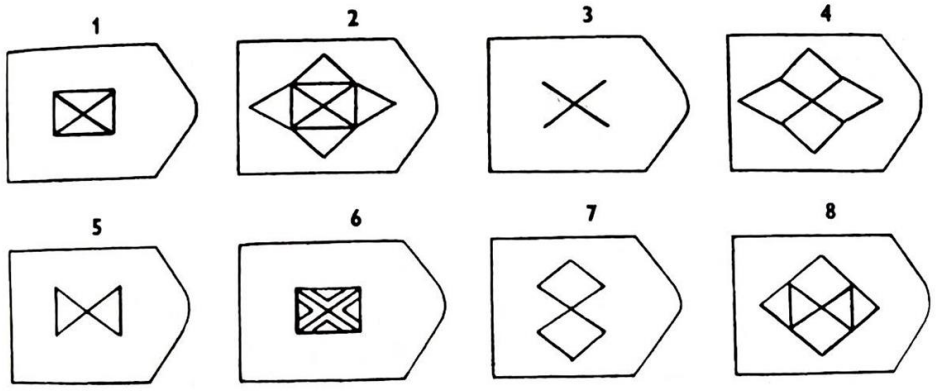

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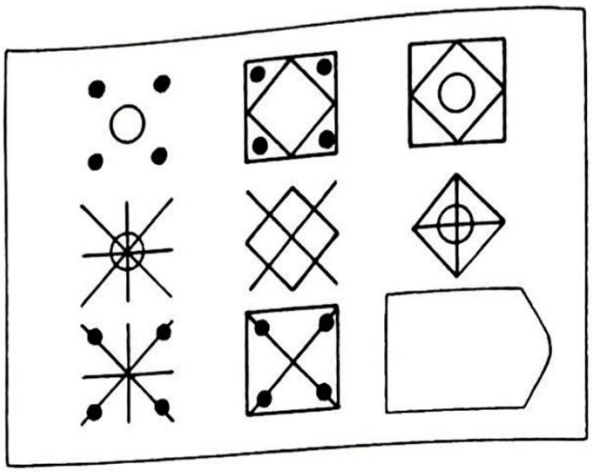

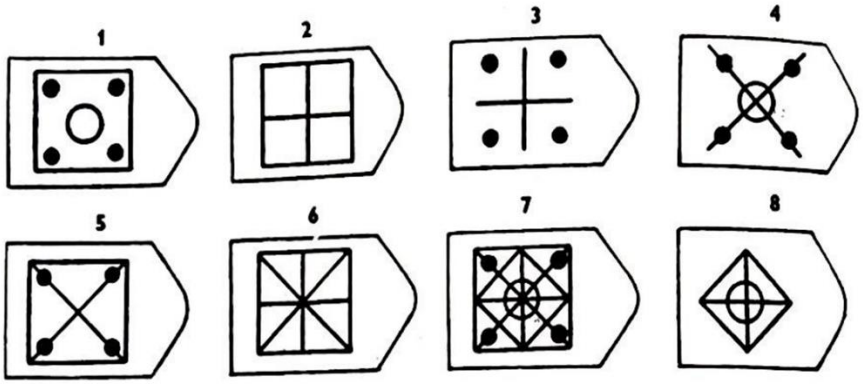

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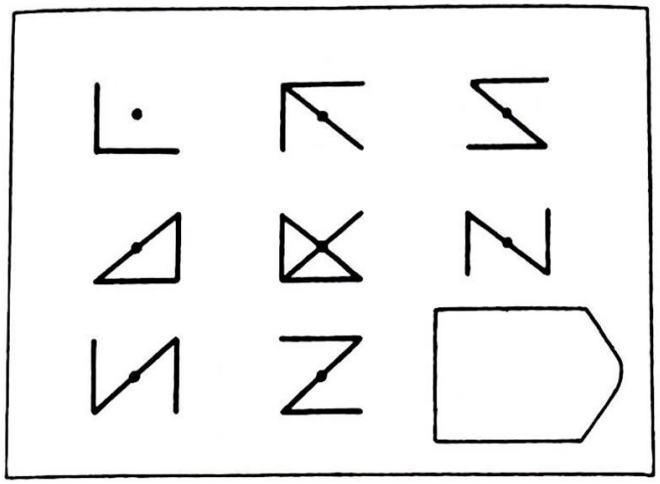

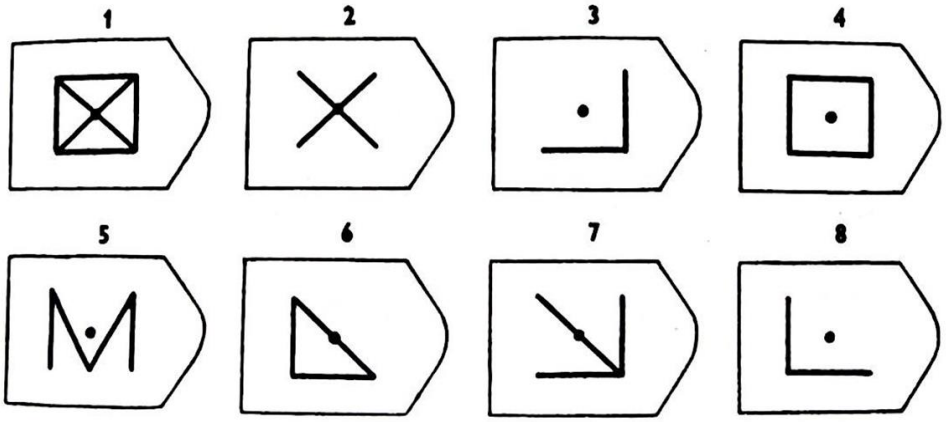

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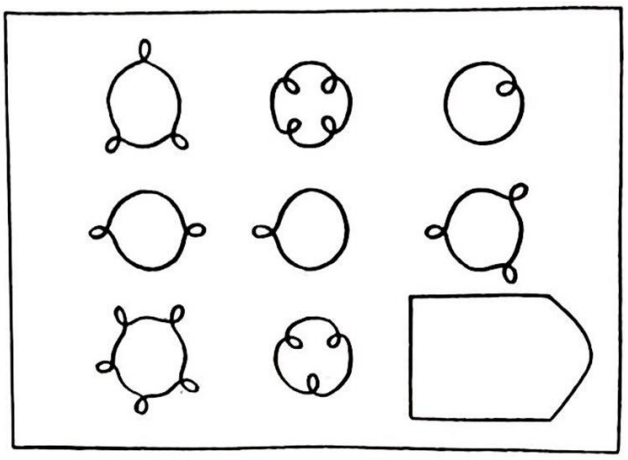

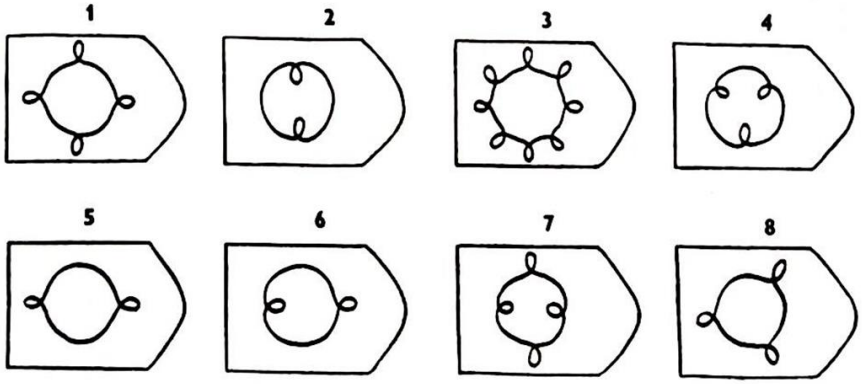

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A STUDY OF LIFE SKILL ABILITIES OF COLLEGE STUDENTS IN AIZAWLCITY

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ABSTRACT
The present study deals with the life skill abilities of college students in Aizawl, the state capital of Mizoram. Cluster sampling method was employed for selection of samples. A sample of 130 students was taken from a cluster of students studying in Government Hrangbana College. Life skill inventory developed by the investigators was used to collect data. Thinking skills, social skills, emotional skills as well as the overall skills of the students were studied. It was found that majority of the students possessed normal life skill abilities. Male students possessed better thinking skills as compared to female students. Urban students were better in thinking skills compared to the rural students. There was no significant difference in the social skills of male and female students. Urban students had better social skills than rural students. There were no significant differences between male and female, and urban and rural students in their emotional skills. There was no significant difference between male and female students in their overall life skills. Urban students had better overall life skills compared to the rural students. Measures for improving life skills are also suggested.

KEYWORDS: Life skills, College students, Thinking skills, Social skills, Emotional skills

INTRODUCTION

Life skills are defined as "the abilities for adaptive and positive behavior that enable individuals to deal
effectively with the demands and challenges of everyday life" (WHO, 1997). 'Adaptive' implies that a person is flexible depending on the situation and is able to adjust to different circumstances. 'Positive behavior' meansthat a person is able to look forward even in difficult situations and can find a glimmer of hope and ways to discover solutions.

UNICEF (2001) defines life skills as "a behavior change or behavioral development approach designed to address a balance of 3 areas: knowledge, attitudes and skills". Life skills are divided into two main categories: those that are unique to specific risk behaviors and situations, and those that are generic. Elements of life skills that are common in all contexts around the world, whether in developed or developing countries are known as 'Core Life Skills'.

TEN CORE SKILLS

According to WHO (1997), there are three categories of fundamental Life Skills which include ten core Life Skills explained as follows:

A. <u>Thinking Life Skills include five core Life Skills</u>:

1. ***Self-awareness:*** It entails our clear understanding of ourselves, including our identity, character, strengths and weaknesses, desires and dislikes.
2. ***Problem solving:*** Constructive problem solving enables a person to solve issues in a clear and non-confusing manner by identifying the cause of the problem and taking constructive efforts to resolve it.
3. ***Decision-making:*** It is the ability to make the right decisions at the right moment, depending on the situation.
4. ***Critical Thinking:*** It is the ability to objectively analyze information, facts, opinions, circumstances, and experiences.
5. ***Creative thinking:*** This is the ability to think outside the box and not stick to one thought process in different scenarios.

B. <u>Social Life Skills include three core Life Skills</u>:

1. ***Interpersonal relationships:*** It indicates that everyone must live in a society and have cordial

2. ***Effective Communication:*** It implies that a person can express their feelings, thoughts, and opinions to themselves in ways that are appropriate to our culture and surroundings, both verbally and non-verbally.
3. ***Empathy:*** It is the ability to sense another person's life circumstances at any given time, even if we are unfamiliar with the issue.

C. Emotional Life Skills include two core Life Skills:

1. ***Coping with emotions:*** It includes identifying emotions in ourselves and others, as well as understanding how these emotions affect our patterns of behavior. After recognizing the emotions, one can respond appropriately to them.
2. ***Coping with Stress:*** Coping with stress means recognizing the sources of stress in our lives and understanding how they affect our mental and physical well-being, as well as responding to stress in a healthy way.

RATIONALE OF THE STUDY

College going students face a whole lot of problems that need to be tackled every day, for instance, anxiety, depression, peer pressure, dropping out of college, low motivation for academics, disinterest in sports and physical activities etc., besides many changes taking places in many cultures and lifestyles for which many of them are not sufficiently equipped. Life Skills help them deal with increased demands in their daily life.

Rapid rate of social change has led to many changes in patterned thinking of people and with the influx of new thinking and new cultural values, there is an emergence of new sets of mannerisms, expectations and opportunities very different from that of their parents (Amandeep, 2016). Imparting life skills education to the students can be helpful as it specifically addresses the needs of young adults, helps in motivating, providing practical, cognitive, emotional, social and self-management skills for life adjustments (Prajapati et.al. 2017).

The present study is thus an attempt to find out the thinking, social, emotional and overall life skill abilities of College students in Aizawl, and to reveal if there are significant differences in these life skills based on their gender and locale.

OBJECTIVES OF THE STUDY

1. To find out the level of thinking skills, social skills, emotional skills and overall life skills possessed by college students in Aizawl city.
2. To compare the thinking skills of college students in Aizawl city with reference to their gender.
3. To compare the thinking skills of college students in Aizawl city with reference to their locale.
4. To compare the social skills of college students in Aizawl city with reference to their gender.
5. To compare the social skills of college students in Aizawl city with reference to their locale.
6. To compare the emotional skills of college students in Aizawl city with reference to their gender.
7. To compare the emotional skills of college students in Aizawl city with reference to their locale.
8. To compare the overall life skills of college students in Aizawl city with reference to their gender.
9. To compare the overall life skills of college students in Aizawl city with reference to their locale.

HYPOTHESES

1. There is no significant difference in the thinking skills of college students in Aizawl city with reference to their gender and locale.
2. There is no significant difference in the social skills of college students in Aizawl city with reference to their gender and locale.
3. There is no significant difference in the emotional skills of college students in Aizawl city with reference to their gender and locale.
4. There is no significant difference in the overall life skills of college students in Aizawl city with reference to their gender and locale

RESEARCH METHODS

The study employed the descriptive survey method as the researchers tried to find out the major life skills of college students in Aizawl city and compare them with reference to their gender and locale.

Population and sample

The population of the study consisted of all the college students in Aizawl city. Cluster sampling techniques was employed for selection of samples. Students of each college in Aizawl city constituted a cluster and 130 students were selected from a cluster of students of Government Hrangbana College out of which 69 were males and 61 were females.

TOOL USED

Life Skills Inventory constructed by the investigators (2021) was used as a tool for collection of data.

ANALYSIS OF DATA

The data collected through Life Skills Inventory were scored and tabulated. The mean as well as the standard deviation in each of the score of thinking skills, social skills, emotional skills and overall life skills were computed. In order to classify the students into different levels in their thinking, social, emotional and overall life skills, those who scored one standard deviation below the mean were categorized as having poor life skill abilities, and those students who scored one standard deviation above the mean were categorized as having good life skill abilities. Those students scoring between minus one standard deviation and plus one standard deviation were categorized as having normal life skill abilities. The students were also compared in their thinking, social, emotional and overall life skills with reference to their gender and locale.

FINDINGS

The findings of the study are presented in accordance with the objectives as follows:

Objective no. 1: To find out the level of thinking skills, social skills, emotional skills and overall life skills possessed by college students in Aizawl city

Table no 1: Level of life skills of college students in Aizawl city

Respondents (N=130)	**Good**	**Normal**	**Poor**
Thinking skills	17 (13.08%)	99 (76.15%)	14 (10.77%)
Social skills	14 (10.77%)	102 (78.46%)	14 (10.77%)
Emotional skills	21 (16.15%)	92 (70.77%)	17 (13.08%)
Overall life skills	18(13.85%)	99 (76.15%)	13 (10%)

Table no. 1 shows that majority (76.15%) of the students had normal thinking skills, while 13.08% of students had good thinking skills and10.77% of all the students had poor thinking skills. The table also shows that majority (78.46%) of the students had normal social skills, while 10.77% of students had good social skills and10.77% of all the students had poor social skills. It can also be seen from the table that majority (70.77%) of the students had normal emotional skills, while 16.15% of students had good emotional skills and13.08% of all the students had poor emotional skills. When we look at the overall life skills, it can be seen that majority (76.15%) of the students had normal overall life skill abilities, while 13.85% of students had good overall life skill abilities and10% of all the students had poor overall life skill abilities. It can also be seen that there were more students having good overall life skills compared to poor overall life skill abilities.

Objective no. 2: To compare the thinking skills of college students in Aizawl city with reference to their gender

In order to compare the thinking skills of male and female students, the mean and standard deviation of the scores of male and female were calculated. The mean differences of these two groups were tested by applying 't' test and the details are presented in the following table no 2.

Table 2: Comparison of thinking skills of college students in Aizawl city with reference to their gender

Groups	**Number**	**Mean**	**SD**	**MD**	**SE_{MD}**	**t- Value**	**Sig level**
Male	69	201.87	17.623	6.476	2.744	2.360	.05
Female	61	195.39	13.596				

As indicated in the above table, the calculated 't' value of 2.360 is greater than the criterion 't' value at .05 level of confidence, therefore, it can be concluded that there was a significant difference between the male and female students in their thinking skills. Therefore, the null hypothesis remains rejected since the two groups differed significantly at .05 level of confidence. A comparison of their mean scores shows that this difference is in favour of the male students, as their mean score is higher than their female counterparts. The result indicates that male students had better thinking skills than the female students.

Objective no. 3: *To compare the thinking skills of college students in Aizawl city with reference to their locale*
To compare the thinking skills of urban and rural students, the mean and standard deviation of the scores of urban and rural students were calculated. The mean differences of these two groups were tested by applying 't' test and the details are presented in the following table no 3.

Table 3: Comparison of thinking skills of college students in Aizawl city with reference to their locale

Groups	Number	Mean	SD	MD	SE_{MD}	t- Value	Sig level
Urban	81	201.30	17.448	6.541	2.668	2.451	.05
Rural	49	194.76	12.835				

As shown in the above table, the calculated 't' value of 2.451 is greater than the criterion 't' value at .05 level of confidence, therefore, it can be concluded that there was a significant difference between the urban and rural students in their thinking skills. Therefore, the null hypothesis remains rejected, since the two groups differed significantly at .05 level of confidence. A comparison of their mean score shows that this difference is in favour of the urban students, as their mean score is higher than their rural counterparts. The result indicates that urban students had better thinking skills than the rural students.

Objective no. 4: To compare the social skills of college students in Aizawl city with reference to their gender
To compare the social skills of male and female students, the mean and standard deviation of the scores of male and female students were calculated. The mean differences of these two groups were tested by applying 't' test and the details are presented in the following table no 4.

Table 4: Comparison of social skills of college students in Aizawl city with reference to their gender

Groups	Number	Mean	SD	MD	SE_{MD}	t- Value	Sig level
Male	69	126.55	13.128	2.466	2.073	1.189	NS
Female	61	129.02	10.479				

Table 4 reveals that the calculated 't' value of 1.189 is lower than the criterion 't' value at both .01 and .05 level. Therefore, it can be concluded that there is no significant difference in the social skills between the male and female college students. Hence, the hypothesis that there is no significant difference in the social skills of college students in Aizawl city with reference to their gender is not rejected.

Objective no. 5: To compare the social skills of college students in Aizawl city with reference to their locale
In order to compare the social skills of urban and rural students, the mean and standard deviation of the scores of urban and rural students were calculated. The mean differences of these two groups were tested by applying 't' test and the details are presented in the following table no 5.

Table 5: Comparison of social skills of college students in Aizawl city with reference to their locale

Groups	Number	Mean	SD	MD	SE_{MD}	t- Value	Sig level
Urban	81	129.44	13.292	4.608	1.940	2.375	.05
Rural	49	124.84	8.807				

As shown in the above table, the calculated 't' value of 2.375 is greater than the criterion 't' value at .05 level of confidence, therefore, it can be concluded that there is a significant difference between the urban and rural students in their social skills. Therefore, the null hypothesis remains rejected, since the two groups differed significantly at .05 level of confidence. A comparison of their mean score shows that this difference is in favour

of the urban students, as their mean score is higher than their rural counterparts. The result indicates that urban students had better social skills than the rural students.

Objective no.6: To compare the emotional skills of college students in Aizawl city with reference to their gender
To compare the emotional skills of male and female students, the mean and standard deviation of the scores of male and female students were calculated. The mean differences of these two groups were tested by applying 't' test and the details are presented in the following table no 6.

Table 6: Comparison of emotional skills of college students in Aizawl city with reference to their gender

Groups	Number	Mean	SD	MD	SE_{MD}	t- Value	Sig level
Male	69	50.00	5.839	1.311	.943	1.391	NS
Female	61	48.69	4.911				

Table 6 reveals that the calculated 't' value of 1.391 is lower than the criterion 't' value at both .01 and .05 level. Therefore, it can be concluded that there is no significant difference in the emotional skills between the male and female college students. Hence the hypothesis that there is no significant difference in the emotional skills of college students in Aizawl city with reference to their gender is not rejected.

Objective no. 7:To compare the emotional skills of college students in Aizawl city with reference to their locale
In order to compare the emotional skills of urban and rural students, the mean and standard deviation of the scores of urban and rural students were calculated. The mean differences of these two groups were tested by applying 't' test and the details are presented in the following table no 7.

Table 7: Comparison of emotional skills of college students in Aizawl city with reference to their locale

Groups	Number	Mean	SD	MD	SE_{MD}	t- Value	Sig level
Urban	81	49.42	5.811	.093	.945	.099	NS
Rural	49	49.33	4.828				

Table 7shows that the calculated 't' value of .099 is lower than the criterion 't' value at both .01 and .05 level. Therefore, it can be concluded that there is no significant difference in the emotional skills between the urban and rural college students. Hence, the hypothesis that there is no significant difference in the emotional skills of college students in Aizawl city with reference to their locale is not rejected.

Objective no. 8: To compare the overall life skills of college students in Aizawl city with reference to their gender
To compare the overall life skills of male and female students, the mean and standard deviation of the scores of male and female students were calculated. The mean differences of these two groups were tested by applying 't' test and the details are presented in the following table no 8.

Table 8: Comparison of overall life skills of college students in Aizawl city with reference to their gender

Groups	Number	Mean	SD	MD	SE_{MD}	t- Value	Sig level
Male	69	378.42	32.505	5.666	5.008	1.131	NS
Female	61	372.75	24.411				

Table 8 shows that the calculated 't' value of 1.131 is lower than the criterion 't' value at both .01 and .05 level. Therefore, it can be concluded that there is no significant difference in the overall life skills between the male and female college students. Hence, the hypothesis that there is no significant difference in the overall life skills of college students in Aizawl city with reference to their gender is not rejected.

Objective no. 9: To compare the overall life skills of college students in Aizawl city with reference to their locale
In order to compare the overall life skills of urban and rural students, the mean and standard deviation of the scores of urban and rural students were calculated. The mean differences of these two groups were tested by applying 't' test and the details are presented in the following table no 9.

Table 9: Comparison of overall life skills of college students in Aizawl city with reference to their locale

Groups	Number	Mean	SD	MD	SE_{MD}	t- Value	Sig level
Urban	81	380.23	31.987	11.867	4.711	2.519	.05
Rural	49	368.37	21.646				

As shown in the above table, the calculated 't' value of 2.519 is greater than the criterion 't' value at .05 level of confidence, therefore, it can be concluded that there is a significant difference between the urban and rural students in their overall life skills. Therefore, the null hypothesis remains rejected, since the two groups differed significantly at .05 level of confidence. A comparison of their mean score shows that this difference is in favour of the urban students, as their mean score is higher than their rural counterparts. The result indicates that urban students had better overall life skills than the rural students.

DISCUSSION

1. It was found that majority of the students had possessed normal life skill abilities. Awasthi and Kumari (2012) also found similar results. It is not surprizing that majority of the college students possess normal life skills, because by and large majority of people are fairly normal in most things, be it intelligence, attitude, life skills etc.
2. It was also found that male students had better thinking skills than the female students. Jellen and Urban (1989) and, Ruth and Birren (1985) also found that males were more creative than females. Thinking skills actually include problem solving, decision making, critical thinking and creative thinking. Since Mizo society is a patriarchal society, where the family man has the responsibility of looking after his family by way of making family decisions and use of critical and creative thinking etc., therefore perhaps, this may be the reason why it was found that male students had better thinking skills compared to female students.
3. It was also found that urban students had better thinking skills compared to rural students. Tanti et al (2020) also found that urban students had higher critical thinking skills compared to rural students. The possible reason for this finding could be that in big cities there seem to be more problems that need to be solved where more critical and creative thinking needs to be utilized compared to rural areas.
4. Findings also revealed that urban students had better social skills compared to rural students. Social skills include interpersonal relationship, effective communication and empathy. Since there are more people in urban areas, people need to learn to communicate more and develop better personal relationships. This could be the likely cause for the present findings.

Suggestions for improvement of the life skills of college students

1. *Teach collaboration as a value and skill set*: Young people need new skills for the current and future workplace that will make them ready to collaborate with others, not only in their own classroom or workplace but potentially with others across the planet. Encouraging students to work together on a creative challenge, and allowing them to reflect on the learnings they take from the exercise, will help them better understand what it means to be a part of an increasingly collaborative and connected world.
2. *Build on evaluation and analysis*: New information is being discovered and shared at an ever-growing rate. Predictions show that 50 percent of the facts students are memorizing today will no longer be accurate or complete in the near future. Students need to know not only how to find accurate information, but also how to critically analyze its reliability and usefulness. Building research-based tasks and projects into your teaching will provide a basis to develop this essential 21st century skill set for work.
3. *Teach tolerance and resilience*: To successfully work in a growing collaborative and global community, employers will be looking for candidates who show an ability and openness to communicate with unfamiliar cultures and ideas. To build these skills, students will need exposure to open discussions and experiences that can help them feel comfortable communicating with others. School trips, debating sessions, visits to a workplace or Q&A's with a local employer are all good ways of showing students open mindsets in action.
4. *Help students learn through their strengths*: We are all born with brains that want to learn. We're also born with different strengths, and by growing the strengths we best identify with we can better feed that appetite for learning. One size certainly doesn't fit all when it comes to developing young minds! It can

be challenging to tailor the curriculum for each individual, but by looking ahead you can start to pinpoint elements of your classes which will appeal to particular students' strengths and interests.

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Original Article

Students' Thinking Skills, Social Skills and Emotional Skills at the Tertiary Level of Education

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Abstract

The present study is an attempt to find out students' thinking skills, social skills and emotional skills at the tertiary level of education in Mizoram. For this, Life Skills inventory constructed by the investigator was used. Sample was collected from a total of 523 college students with 230 males and 293 females using stratified random sampling method. It was found that male students were better than female students in thinking skills; science students had better thinking skills than commerce and arts students. With respect to emotional skills, it was found that males had better emotional skills than female students.

Keywords: thinking skills; social skills, emotional skills, college students.

1. Introduction

Life skills are defined as "the abilities for adaptive and positive behavior that enable individuals to deal effectively with the demands and challenges of everyday life" (WHO, 1997). Tying one's shoe lace, swimming, driving a car and using a computer are, for most people, useful life skills. Broadly speaking, the term 'life skills' is usually used for any of the skills needed to deal well and effectively with the challenges of life. It should therefore be clear that everyone will potentially have a different list of the skills they consider most essential in life, and those that they consider unnecessary. Someone living in the jungles of Andaman and Nicobar Island might put hunting high on their list of essential skills. A person living in big cities, however, would not even think that this skill is necessary.

Certain skills may be more or less relevant to us depending on our life circumstances, our culture, beliefs, age, geographic location, time etc. For example, students studying in college or university need study skills which may include understanding how to organize oneself for study, do research, and even write up a dissertation or thesis. These are not skills that everybody will need, but writing skills are likely to be useful in a variety of careers and jobs. When buying a house, one may need to employ negotiation skills, and may certainly need plenty of patience and good temper. These skills may probably be high on 'essential life skills' list for parents who have children.

In order to get a job, one would need to work on his employability skills and think about how to apply for a job and how to cope in an interview. After getting a job, one would still need to develop leadership skills, especially if they need to lead teams or group. When starting a family, one needs parenting skills and parents may find that time management and organizing skills become much more important. By learning new skills, we increase our understanding of the world around us and equip ourselves with the tools we need to live a more productive and fulfilling life, finding ways to cope with the challenges that life, inevitably, throws at us.

According to UNICEF (2001), there are three categories of Life Skills which include ten core Life Skills as follows:

1. Thinking skills which includes skills like self-awareness, problem solving, decision making, critical thinking and creative thinking.
2. Social skills which includes interpersonal relationships, effective communication and empathy.
3. Emotional skills which includes coping with emotions and coping with stress.

The present study will focus on these life skills which will be compared with reference to gender and stream of study among college students in Mizoram.

2. RATIONALE OF THE STUDY

In a constantly changing environment, having life skills is an essential part of being able to meet the challenges of everyday life. The dramatic changes in global economies over the past years have been matched with the transformation in technology and these are all impacting on education, the workplace and our home life. To cope with the increasing pace and change of modern life, students need new life skills such as the ability to deal with stress and frustration. Today's students will have many new jobs over the course of their lives, with associated pressures and the need for flexibility.

Benefits for the individual: In everyday life, the development of life skills helps students to:

- Discover innovative ways of thinking and problem-solving
- Help students understand the effects of their actions and encourage them to take accountability for their own choices rather than blaming others
- Develop a better sense of self-awareness and appreciation for others
- Develop confidence in spoken communication and group cooperation

Benefits for employment: While students work hard to get good grades, many still struggle to gain employment. The reason may be because employers are looking not just for academic success but key employability skills including:

- The capacity for self-management, problem-solving, and understanding of the corporate environment
- Being an effective member of the team
- Management of time and people
- Flexibility to take on different roles
- The capability to lead by example.

Benefits for society: The more we develop life skills individually, the more these affect and benefit the world in which we live:

- Recognizing cultural awareness and citizenship makes international cooperation easier
- Respecting diversity allows creativity and imagination to flourish developing a more tolerant society
- Developing negotiation skills, the ability to network and empathize can help to build resolutions rather than resentments

From these points, it is clear that life skill is important as it brings benefit to the individual and society. Researching on life skills of students at the tertiary level of education and comparing them with respect to gender and stream of study is a new area that has not been done in Mizoram, therefore it is necessary to take this study.

3. OBJECTIVES

1. To find out the level of thinking skills, social skills and emotional skills of students at the tertiary level of education in Mizoram.
2. To compare students' thinking skills with reference to gender and stream of study.
3. To compare students' social skills with reference to gender and stream of study.
4. To compare students' emotional skills with reference to gender and stream of study.

4. HYPOTHESES

1. There is no significant difference in students' thinking skills with reference to gender.
2. There is no significant difference in students' thinking skills with reference to different stream of study.
3. There is no significant difference in students' social skills with reference to gender.
4. There is no significant difference in students' social skills with reference to different stream of study.
5. There is no significant difference in students' emotional skills with reference to gender.
6. There is no significant difference in students' emotional skills with reference to different stream of study.

5. METHODOLOGY

The study is basically a descriptive survey method as it aims to uncover the thinking, social and emotional skills of students at the tertiary level of education and to compare them with reference to their gender and stream of study.

Population and sample

The population of the study involved all college students in Mizoram. Multistage stratified random sampling technique was employed for selection of samples. Five districts were randomly selected and out of these five districts, ten colleges were randomly selected, Out of the ten colleges, 523 students with 230 males and 293 females who are currently studying in the 6th semester were chosen for the sample.

Tool used

Life Skills Inventory constructed by the investigators (2021) was the tool used for collecting the data.

6. ANALYSIS OF DATA

The data collected were scored and tabulated. A z-score norm was computed and was used to categorize the students into five groups. The comparison of thinking skills, social skills and emotional skills of the students was performed with reference to their gender and stream of study using 't' test and ANOVA.

7. FINDINGS

The findings of the study are presented in accordance with the objectives as follows:

Objective 1: To find out the level of thinking skills, social skills and emotional skills of students at the tertiary level of education in Mizoram.

To find out the level of students' thinking skills, social skills and emotional skills, the score obtained in each of the skills were converted into z-score and were then classified into five categories as depicted in table No. 1 below:

Table 1: Level of thinking skill, social skill and emotional skill among students at the tertiary level of education

Skills	Extremely good	Good	Normal	Poor	Extremely poor
Thinking skills	16 (3.06%)	135 (25.81%)	223 (42.64%)	139 (26.58%)	10 (1.91%)
Social skills	14 (2.68%)	135 (25.81%)	219 (41.87%)	144 (27.53%)	11 (2.10%)
Emotional skills	9 (1.72%)	165 (31.55%)	206 (39.39%)	130 (24.86%)	13 (2.49%)

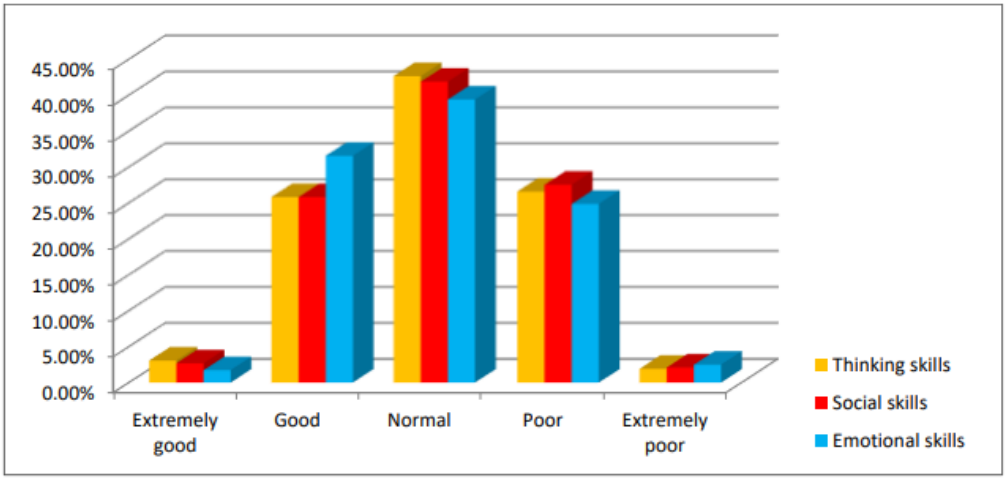

Figure 1: Level of thinking skill, social skill and emotional skill among students at the tertiary level of education

The above table 1 shows that majority (42.64%) of students had normal thinking skills. 25.81% had good thinking skills and 26.58% had poor thinking skills. A mere 3.06% of students had extremely good thinking skills and only 1.91% students had extremely poor thinking skills.

The above table also shows that Majority i.e. 41.87% of students had normal social skills, 25.81% students had good social skills while 27.53% had poor social skills. Only 2.68% students had extremely good social skills and only 2.10% students had extremely poor social skills.

With respect to emotional skills, majority i.e. 39.39% of students had normal emotional skills, 31.55% students had good emotional skills and 24.86% of students had poor emotional skills. A mere 1.72% of students had extremely good emotional skills while only 2.49% of students had extremely poor emotional skills.

Objective 2: To compare students' thinking skills with reference to gender and stream of study.

In order to compare thinking skills of students with reference to gender, the mean and standard deviation of thinking skill scores of male and female were calculated. The mean differences of these two groups were tested by applying 't' test and the details are presented in the following table no 2.

Table 2: Comparison of male and female thinking skills among students at the tertiary level of education in Mizoram

Groups	Number	Mean	SD	MD	t- value	Sig level
Male	230	138.40	12.481			
Female	293	134.37	12.804	4.036	3.629	.01

As indicated in the above table, the calculated 't' value of 3.629 is greater than the criterion 't' value at .01 level of confidence, therefore, it can be concluded that there is a significant difference between the male and female students in their thinking skills. Therefore, the null hypothesis no.1 remains rejected since the two groups differed significantly at .01 level of confidence. A comparison of their mean scores shows that this difference is in favour of the male students, as their mean score is higher than their female counterparts. The result indicates that male students had better thinking skills than the female students.

In order to compare thinking skills of students with respect to stream of study ANOVA was used and the result is presented in Table 3.

Table 3: ANOVA for students' thinking skills with reference to stream of study

	Sum of squares	df	Mean square	F	Sig
Between group	1422.240	2	711.120	4.390	.013
Within group	84226.005	520	161.973		
Total	85648.245	.522			

Result of ANOVA revealed that there is significant difference in the thinking skills of students from different stream of study. Therefore the hypothesis no.2 that there is no significant difference in students' thinking skills with reference to different stream of study is rejected. Tukey post hoc analysis revealed that the difference lies in between science students & commerce students and between science students & art students which is both significant at .05 level. A comparison of their mean score shows that the science students have better thinking skills than both the commerce students and the arts students.

Objective 3: To compare students' social skills with reference to gender and stream of study.

In order to compare social skills of students with reference to gender, the mean and standard deviation of social skill scores of male and female were calculated. The mean differences of these two groups were tested by applying 't' test and the details are presented in the following Table 4.

Table 4: Comparison of male and female social skills of students at the tertiary level of education in Mizoram

Groups	**Number**	**Mean**	**SD**	**MD**	**t- value**	**Sig level**
Male	230	91.70	9.258			
Female	293	92.41	8.554	.710	.901	NS

Table 4 reveals that the calculated 't' value of .901 is lower than the criterion 't' value at both .01 and .05 level. Therefore, it can be concluded that there is no significant difference in the social skills between male and female students at the tertiary level of education in Mizoram. Hence the hypothesis no. 3 that states that there is no significant difference in students' social skills with reference to gender is accepted.

In order to compare social skills of students with respect to stream of study ANOVA was used and the result is presented in Table 5.

Table 5: ANOVA for students' social skills with reference to stream of study

	Sum of squares	df	Mean square	F	Sig
Between group	32.249	2	16.125	.204	.815
Within group	41028.160	520	78.900		
Total	41060.409	.522			

Result of ANOVA revealed that there is no significant difference in the social skills of students from different stream of study. Therefore the hypothesis no.4 that says that there is no significant difference in students' thinking skills with reference to different stream of study is accepted.

Objective 5: To compare students' emotional skills with reference to gender and stream of study.

In order to compare emotional skills of students with reference to gender, the mean and standard deviation of emotional skill scores of male and female students were calculated. The mean differences of these two groups were tested by applying 't' test and the details are presented in the following Table 6.

Table 6: Comparison of male and female emotional skills of students at the tertiary level of education in Mizoram

Groups	**Number**	**Mean**	**SD**	**MD**	**t- value**	**Sig level**
Male	230	25.42	3.915			
Female	293	24.39	4.396	1.029	2.826	.01

As can be seen in the above table, the calculated 't' value of 2.826 is greater than the criterion 't' value at .01 level of

confidence, therefore, it can be concluded that there is a significant difference between the male and female students in their emotional skills. Therefore, the null hypothesis no. 5 which assumes that there is no significant difference in students' emotional skills with reference to gender remains rejected since the two groups differed significantly at .01 level of confidence. A comparison of their mean scores shows that this difference is in favour of the male students, as their mean score is higher than their female counterparts. The result indicates that male students had better emotional skills than the female students.

In order to compare emotional skills of students with respect to stream of study ANOVA was used and the result is presented in Table 7.

Table 7: ANOVA for students' emotional skills with references to stream of study

	Sum of squares	df	Mean square	F	Sig
Between group	28.667	2	14.334	.805	.448
Within group	9261.788	520	17.811		
Total	9290.455	.522			

Result of ANOVA revealed that there is no significant difference in the emotional skills of students from different stream of study. Therefore the hypothesis no. 6 that presumes that there is no significant difference in students' emotional skills with reference to different stream of study is accepted.

8. DISCUSSION AND CONCLUSION

The present study found that majority of college students had normal thinking skills, normal social skills and normal emotional skills, while only few students had either extremely good and extremely poor skills on these dimensions. Awasthi and Kumari (2012) also found similar results in their study. Finding of the present study is not unexpected because by and large majority of people tend to be normal in most human attributes.

It was also found that male students at the tertiary level of education have better thinking skills compared to the female college students. Contrary to the present finding, Kataria (2018) on assessment of cognitive life skills of senior secondary students found that there is no significant difference between male and female students. The reason why the present study found males better at thinking skills could be because males are biologically intended to provide for, and protect community, women and children, therefore males needs to be extra skilled at analysing and thinking critically when planning how to provide for, and protect the community. Females on the other hand, are not biologically intended to provide for, and protect other people to the same extent as males are. Therefore, females do not need to be as skilled as males are, at analysing and thinking critically about things.

It was also found that male students had better emotional skills compared to the female students. As opposed to this finding, Josephine and Selvakumar (2015) found that female students had better emotional skills compared to male students. In discussing the present finding, there is no argument that females are more likely to show their emotions than males. From an early age, men are conditioned to believe that expressing their feelings is out of character with the male identity. Doing so can ruin their image of being strong and stoic. Specifically, men are told that crying in front of other people will threaten their masculinity. So this could be the basis for the present findings.

The present study also found that science students had better thinking skills than both the commerce students and the arts students. The rationale for the present findings could be that science subject helps students learn creative and critical thinking skills when they pose questions, make predictions, speculate, and investigate to solve problems, make decisions based on evidence, analyse and evaluate evidence. Perhaps this could be the reason why science students are better in thinking skills than the commerce and arts students at the tertiary level of education in Mizoram.

In conclusion, students at the tertiary level of education in Mizoram mostly had normal thinking, social and emotional skills. These three skills are important life skills which every student should strive to possess. Although there is no significant difference between male and female students in their social skills, male students are definitely better in thinking and emotional skills compared to the female students. Therefore, it is important that female students in Mizoram needs to focus their attention in developing their thinking and emotional skills. Commerce and Arts students also need to enhance their thinking skills since the present study found that science students had the best thinking skills amongst them.

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Convener

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ANNEXURE - I

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DEPARTMENT	: Education
TITLE OF THESIS	: Construction and Standardization of Life Skills Inventory and Relationship between Life Skills and Cognitive Abilities of College Students in Mizoram
DATE OF ADMISSION	: 31.07.2019

APPROVAL OF RESEARCH PROPOSAL

1.	DRC	: 05.03.2020
2.	BOS	: 14.05.2020
3.	SCHOOL BOARD	: 29.05.2020

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Education Department

ABSTRACT

CONSTRUCTION AND STANDARDIZATION OF LIFE SKILLS INVENTORY AND RELATIONSHIP BETWEEN LIFE SKILLS AND COGNITIVE ABILITIES OF COLLEGE STUDENTS IN MIZORAM

AN ABSTRACT SUBMITTED IN PARTIAL FULFILLMENT OF THE REQUIREMENTS FOR THE DEGREE OF DOCTOR OF PHILOSOPHY

ESTHERINE LALRINMAWII
MZU REGISTRATION NO: 1506818
Ph.D. REGISTRATION NO: MZU/Ph.D./1361 of 31.07.2019

DEPARTMENT OF EDUCATION
SCHOOL OF EDUCATION
JULY, 2024

ABSTRACT

Construction and Standardization of Life Skills Inventory and Relationship between Life Skills and Cognitive Abilities of College Students in Mizoram

By
Estherine Lalrinmawii
Department of Education

Supervisor
Prof. Lalhmasai Chuaungo
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Submitted

In partial fulfillment of the requirement of the Degree of Doctor of Philosophy in Education of Mizoram University, Aizawl.

Introduction

A skill represents a mastered capability to perform certain tasks effectively or accomplish specific objectives. These abilities are acquired and honed through a series of progressive stages, aligning with an individual's developmental age and maturity. While skills embody the proficiency in conducting certain activities, their development is not solely reliant on formal learning or training programs. Instead, they often emerge naturally and spontaneously as part of the typical growth process, influenced by one's interests, natural inclinations, and aptitudes (Amandeep, 2016). According to Flanagan (1954) skills can be defined as "learned behaviours and acquired abilities that enable individuals to perform specific tasks or functions efficiently and effectively."

Life skills are defined as “the abilities for adaptive and positive behavior that enable individuals to deal effectively with the demands and challenges of everyday life” (WHO, 1997). ‘Adaptive’ means that a person is flexible in approach and is able to adjust in different circumstances. 'Positive behavior’ implies that a person is forward looking, even in difficult situations, can find a ray of hope and opportunities to find solutions.

The principal components of life skills can be broadly categorized into three groups: thinking skills, social skills, and emotional skills.

1. **Thinking Skills:** The World Health Organization (WHO, 1997) defines thinking skills as "the cognitive abilities needed to analyse, evaluate, and use information to solve problems, make decisions, and learn new things".
2. **Social Skills:** According to the World Health Organization, social skills refer to the ability of individuals to interact and communicate effectively with others, both verbally and non-verbally, in a variety of social situations. These skills are essential for building and maintaining relationships, collaborating with others, and navigating social and cultural contexts (WHO, 1997).
3. **Emotional Skills:** WHO characterizes emotional skills as the capacity to identify and comprehend emotions in oneself and others, the skill to control and oversee these emotions, and the aptitude to use emotions to direct thoughts and actions (WHO, 1997).

Ten Core Skills

WHO (1997) has identified a set of ten core life skills that are considered essential for individuals to lead a healthy and productive life. These skills include:

Thinking Skills:

1. **Self-awareness:** Self-awareness, within the context of thinking skills, refers to the ability to consciously recognize and understand one's thoughts, beliefs, biases, and cognitive processes.
2. **Critical thinking:** Critical thinking refers to the ability to objectively analyse, evaluate, and interpret information and arguments, as well as to generate well-reasoned and logical conclusions.
3. **Creative thinking:** Creative thinking refers to the ability to generate novel and original ideas, think outside the box, and approach problems or situations with a fresh perspective.
4. **Decision-making:** Decision-making refers to the ability to gather and assess information, weigh alternatives, and make choices or judgments that are informed and aligned with one's goals and values.
5. **Problem-solving:** Problem-solving refers to the ability to identify, analyse, and resolve problems or challenges in a systematic and effective manner.

Social Skills:

6. **Empathy:** Empathy refers to the ability to understand and share the emotions, perspectives, and experiences of others.
7. **Effective communication:** Effective communication refers to the ability to convey information, ideas, and feelings clearly and accurately, while also actively listening and understanding others.
8. **Interpersonal relationships:** Interpersonal relationships refer to the connections, interactions, and associations between individuals. They involve the ways in which people communicate, collaborate, and relate to one another.

Emotional Skills:

9. **Coping with stress:** Coping with stress is a skill that individuals can develop to effectively manage and adapt to the challenges and demands of stressful situations.

10. **Coping with emotions:** Coping with emotions refers to the ability to recognize, regulate, and manage one's emotional responses to challenging or stressful situations.

Cognition encompasses the process of acquiring knowledge, involving the collection, organization, and utilization of information. Cognitive skills are the essential tools individuals employ for learning, enabling them to grasp and apply what is taught in an educational context. These mental capabilities are indispensable for absorbing and comprehending content, irrespective of the specific academic subjects covered in educational institutions. The crucial factor lies in how effectively one assimilates and utilizes acquired knowledge, placing greater significance on the quality of information processing rather than the sheer volume of information possessed (Neisser, 1976).

Cognitive abilities, as defined by Carroll (1993), represents a set of mental capacities that include a wide array of processes such as attention, memory, language comprehension, problem-solving, and decision-making.

Rationale of the study

The study of life skills and cognitive abilities among college students in Mizoram holds significant importance due to the unique socio-cultural context of Mizoram and the developmental stage of college students. This area remains relatively unexplored, particularly in the context of higher education in Mizoram. Cognitive abilities are fundamental to life skills; for instance, problem-solving, a crucial life skill, relies on cognitive processes like attention, memory, and reasoning. Concurrently, developing life skills can enhance cognitive abilities; effective communication, a vital life skill, can stimulate language processing and social cognition. However, there is limited empirical research in the Indian context regarding these associations, prompting this study to bridge the gap and illuminate the intricate relationship between life skills and cognitive abilities.

Moreover, there is a scarcity of research focusing on life skills and cognitive abilities among college students in North Eastern India, especially in Mizoram. Recognizing the global importance of holistic development, investigating this interplay could impact educational practices. The findings may inform curriculum

development, incorporating essential life skills and pedagogical strategies for effective development of both life skills and cognitive abilities. This insight could lead to intervention programs and workshops aimed at enhancing students' life skills and cognitive abilities, promoting their overall growth.

Furthermore, college years signify a pivotal stage marked by the transition to adulthood, encompassing increased independence, new social roles, career planning, and sometimes relocation. These transitions demand a robust set of life skills and cognitive abilities. Exploring these aspects in the Mizoram context can provide valuable insights for facilitating this transition and identifying areas where students may require support.

Last but not the least, in a state like Mizoram, not much importance is given to developing life skills or even assessing the presence of it. A life skills inventory has never been constructed in the context of Mizoram and assessing the life skills of college students in comparison to their cognitive abilities has never been done before. This is the reason why the present study has been proposed. The proposed study seeks to answer the research questions given below:

1. Has life skills inventory ever been constructed and standardized for college students in Mizoram?
2. What levels of life skills do college students in Mizoram possess?
3. What levels of cognitive abilities do college students in Mizoram possess?
4. Do male college students have better life skills as compared to female college students?
5. Do male college students differ from female college students in their cognitive abilities?
6. Are there any differences in the life skills of arts, science and commerce college students?
7. Are there any differences in the cognitive abilities of arts, science and commerce college students?
8. Are there any differences in the life skills of college students with reference to their father's working status?
9. Are there any differences in the cognitive abilities of college students with reference to their father's working status?

10. Are there any differences in the life skills of college students with reference to father's educational qualification?
11. Are there any differences in the cognitive abilities of college students with reference to father's educational qualification?
12. Is there any relationship between life skills and cognitive abilities of college students?

Statement of the problem

The problem proposed to be investigated reads as, **"Construction and Standardization of Life Skills Inventory and Relationship between Life Skills and Cognitive Abilities of College Students in Mizoram"**.

Objectives of the study

1. To construct and standardize a life skills inventory for college students.
2. To assess the overall and component-wise level of life skills of college students in Mizoram.
3. To assess the level of cognitive abilities of college students in Mizoram.
4. To compare the different components of life skills and cognitive abilities of college students with reference to their gender.
5. To compare the different components of life skills and cognitive abilities of college students with reference to their stream of study.
6. To compare the different components of life skills and cognitive abilities of college students with reference to their father's working status.
7. To compare the different components of life skills and cognitive abilities of college students with reference to their father's level of educational qualification.
8. To find out the relationship between different components of life skills and cognitive abilities of college students.
9. To make suggestions for developing life skills and enhancing cognitive abilities of college students in Mizoram.

Null hypotheses

1. There is no significant difference in the life skills of college students with reference to gender.
2. There is no significant difference in the thinking skills of college students with reference to gender.
3. There is no significant difference in the social skills of college students with reference to gender.
4. There is no significant difference in the emotional skills of college students with reference to gender.
5. There is no significant difference in the cognitive abilities of college students with reference to gender.
6. There is no significant difference in the life skills between science and commerce college students.
7. There is no significant difference in the life skills between science and arts college students.
8. There is no significant difference in the life skills between commerce and arts college students.
9. There is no significant difference in the thinking skills between science and commerce college students.
10. There is no significant difference in the thinking skills between science and arts college students.
11. There is no significant difference in the thinking skills between commerce and arts college students.
12. There is no significant difference in the social skills between science and commerce college students.
13. There is no significant difference in the social skills between science and arts college students.
14. There is no significant difference in the social skills between commerce and arts college students.
15. There is no significant difference in the emotional skills between science and commerce college students.

16. There is no significant difference in the emotional skills between science and arts college students.
17. There is no significant difference in the emotional skills between commerce and arts college students.
18. There is no significant difference in the cognitive abilities between science and commerce college students.
19. There is no significant difference in the cognitive abilities between science and arts college students.
20. There is no significant difference in the cognitive abilities between commerce and arts college students.
21. There is no significant difference in the life skills of college students with reference to father's working status.
22. There is no significant difference in the thinking skills of college students with reference to father's working status.
23. There is no significant difference in the social skills of college students with reference to father's working status.
24. There is no significant difference in the emotional skills of college students with reference to father's working status.
25. There is no significant difference in the cognitive abilities of college students with reference to father's working status.
26. There is no significant difference in the life skills between under-matric fathers and graduate fathers of college students.
27. There is no significant difference in the life skills between graduate fathers and post-graduate fathers of college students.
28. There is no significant difference in the life skills between under-matric fathers and post-graduate fathers of college students.
29. There is no significant difference in the thinking skills between under-matric fathers and graduate fathers of college students.
30. There is no significant difference in the thinking skills between graduate fathers and post-graduate fathers of college students.
31. There is no significant difference in the thinking skills between under-matric fathers and post-graduate fathers of college students.

32. There is no significant difference in the social skills between under-matric fathers and graduate fathers of college students.
33. There is no significant difference in the social skills between graduate fathers and post-graduate fathers of college students.
34. There is no significant difference in the social skills between under-matric fathers and post-graduate fathers of college students.
35. There is no significant difference in the emotional skills between under-matric fathers and graduate fathers of college students.
36. There is no significant difference in the emotional skills between graduate fathers and post-graduate fathers of college students.
37. There is no significant difference in the emotional skills between under-matric fathers and post-graduate fathers of college students.
38. There is no significant difference in the cognitive abilities between under-matric fathers and graduate fathers of college students.
39. There is no significant difference in the cognitive abilities between graduate fathers and post-graduate fathers of college students.
40. There is no significant difference in the cognitive abilities between under-matric fathers and post-graduate fathers of college students.
41. There is no significant relationship between different life skills and cognitive abilities of college students.
42. There is no significant relationship between thinking skills and cognitive abilities of college students.
43. There is no significant relationship between social skills and cognitive abilities of college students.
44. There is no significant relationship between emotional skills and cognitive abilities of college students.

Review of related literature

A total of 100 reviews had been incorporated in the study. There were 51 studies done in India and 49 studies done abroad. The review period ranges from 1958 to 2023.

Methodology

The present study is descriptive in nature. Therefore, descriptive survey method had been employed.

Population

The population of the study comprised of all the college students in Mizoram affiliated to Mizoram University.

Sample

In order to study and compare life skills and cognitive abilities of college students, 523 students were selected as samples for the present study. The final sample comprised of 230 males and 293 female college students from the arts, science and commerce stream studying in colleges of Mizoram affiliated to Mizoram University.

The samples were selected following multi-stage stratified random sampling technique taking districts located in the North, East, West, South and Central Mizoram as strata. The name of colleges and sample distribution of the students is presented in the following table no. 1

Table: 1
Colleges and number of students selected for the sample

District	Name of Colleges	No. of male students			No. of female students			Total
		Sc	Com	Arts	Sc	Com	Arts	
Aizawl (Central)	Government Hrangbana College	0	23	39	0	21	27	110
	Government Aizawl College	0	9	0	0	31	0	40
	Pachhunga University College	68	12	6	63	35	26	210
	Government J. Thankima College	0	0	11	0	0	14	25
Lunglei (South)	Government Lungei College	21	0	0	16	0	0	37
	Government J.Buana College	0	8	0	0	12	0	20
	Higher and Technical Institute of Mizoram	0	13	0	0	7	0	20
Champhai (East)	Government Champhai College	0	0	8	0	0	22	30
Kolasib (North)	Government Kolasib College	0	0	5	0	0	11	16
Mamit (West)	Government Mamit College	0	0	7	0	0	8	15
	Total	**89**	**65**	**76**	**79**	**106**	**108**	**523**

Tools used for data collection

Following are the tools used for the present study:

1. Life Skills Inventory (2023) developed by the investigator.
2. Raven's Standard Progressive Matrices test (1993) developed by John C. Raven.

Administration of tools and collection of data

Both the life skills inventory and Raven's standard progressive matrices test were administered to all 523 college students. The study's objectives and guidelines for marking the responses of their choice were clearly explained to them. While collecting back the filled in responses from the respondents, it was ensured that all questions and statements were responded and that the required personal information was provided by them.

Analysis of data

Quantitative analysis of data was done by making use of descriptive and inferential statistics like measures of central tendency, percentages, z-score, stanine grade and percentiles along with Pearson product moment correlation and t-test.

Major findings of the study

The following are the major findings of the study:

1. Construction and standardization of life skills inventory

The investigator developed and standardized a Likert-style life skills inventory specifically for college students and the process employed for its construction and standardization is outlined below:

Selection of items

In order to formulate the statements needed for measuring college students' life skills, the investigator reviewed various standardized life skills inventories and extensively consulted literature and books on the subject. After studying these existing scales, books, and literature, a preliminary draft comprising 124 statements for the life skills inventory was meticulously crafted. This thorough process aimed to incorporate a comprehensive range of statements that could accurately capture the genuine life skills exhibited by college students. These statements/items were prepared keeping in

view different dimensions related to life skills such as self-awareness skills, empathy skills, problem solving skills, decision making skills, critical thinking skills, creative thinking skills, interpersonal relationship skills, effective communication skills, coping with stress and emotion.

Content Validity

Validity refers to how well an instrument accurately assesses what it intends to measure and functions as intended. In the case of the draft statements, they were reviewed and assessed for content validity by a panel of twelve experts. These experts included professionals with expertise in the fields of education and psychology. Their role involved both editing the draft statements and evaluating their content validity. Following input from experts, adjustments were made to the initial inventory draft. Certain statements were removed, new ones added, and some were altered based on their recommendations. As a result, 112 statements were preserved for the preliminary draft of the life skills inventory.

Pre-testing of the preliminary draft

Before conducting a trial run of the inventory with college students, the researcher conducted a preliminary test with twenty students from Govt. North College. These students were asked to provide feedback on the clarity and comprehensibility of the language used in the draft. Additionally, they were tasked with identifying any issues they encountered while responding to the items. The purpose of this exercise was to determine whether the inventory would be suitable and well-received by the intended population. Notably, no further revisions or modifications were made to the instructions or language of the inventory after incorporating the feedback received from these students.

Try out

Life Skills Inventory consisting of 112 items was then prepared for the final try out. This was administered to 100 students of Govt. Hrangbana College who were randomly selected. Respondents were simply asked to provide their responses truthfully. Subsequently, after the inventory was administered to 100 college students, item analysis was conducted by determining the discrimination value for each item.

Item discrimination

Following the administration of the inventory to 100 college students, a Likert scoring method was employed. All the scores were organized in ascending order, and both the upper 27% and the lower 27% of scores were reserved for the purposes of item analysis and discrimination.

The life skills inventory underwent a thorough analysis process. Initially, the mean and standard deviation were calculated separately for the top and bottom groups, which were selected based on their scores. Subsequently, t-values were computed to assess the significance of differences in scores between these two groups for all 112 statements/items. Upon completion of this step, statements with t-values equal to or greater than 2.01, signifying significance at a 0.05 confidence level, were retained for the final inventory. Statements with t-values less than 2.01 were rejected. Following the item discrimination process, a total of 40 statements were further eliminated. As a result, the final version of the inventory used for data collection consisted of 72 statements.

Establishment of reliability

Reliability pertains to the consistency and stability of results obtained from an assessment tool. A reliable test produces consistent scores when taken multiple times by the same individual and is crucial for ensuring the test's validity. To establish the reliability of the newly developed Life Skills Inventory, the researcher employed the 'Test-Retest Method.' This involved administering the inventory twice within a two-week interval at Govt. Hrangbana College. Out of the total students who attempted the tests, there were 95 students who sat for both the first test and the second test. The coefficient of reliability was computed between the scores of the two tests by using the "Product Moment Correlation". The co-efficient of reliability between the two tests came out to be .79 which could be considered adequately reliable for the life skills inventory.

Establishment of validity

Validity is the extent to which an instrument measures what it is supposed to measure and performs as it is designed to perform. For the present Life skills inventory, content validity was established by seeking the opinions of experts in the field of

education and psychology with the nature of content covered by the statements on life skills. The experts approved on the validity of the content of items.

For establishing criterion-related validity, the researcher administered both the newly developed Life Skills Inventory and Dr. Raina Tiwari's "Life Skill Scale" to 100 Govt. Hrangbana College students. Upon scoring and computing the correlation coefficient between the two tests, a correlation of 0.749 emerged. This way, the inventory was validated by means of concurrent validity.

Scoring procedure and Serial Number of Positive and Negative Items

The scoring pattern employed for the current Life Skills Inventory aligns with the Likert scale. Respondents were tasked with providing their individual perspectives on each statement using a five-point scale, including options like Strongly Agree, Agree, Undecided, Disagree, and Strongly Disagree. To calculate scores, positive statements were assigned values of 5, 4, 3, 2, 1, while negative statements received scores of 1, 2, 3, 4, 5. Given that there are a total of 72 statements in the scale, the highest attainable score on the test is (72 X 5) 360, whereas the lowest achievable score is (72 X 1) 72. This scoring approach is designed to capture the varying degrees of agreement or disagreement with the statements, allowing for a comprehensive assessment of respondents' views. The item numbers associated with positive and negative statements are given in Table 2

Table 2

Item Numbers for Positive and Negative Statements

Serial no.	Types of statements	Item Numbers	Total
1	Positive	1, 5, 6, 7, 8, 9, 12, 13, 15, 17, 19, 21, 22, 24, 25, 27, 28, 31, 33, 34, 35, 37, 38, 39, 41, 42, 44, 45, 47, 48, 49, 51, 52, 53, 55, 57, 59, 60, 61, 63, 64, 65, 66, 67, 68, 69, 70, 71, 72	49
2	Negative	2, 3, 4, 10, 11, 14, 16, 18, 20, 23, 26, 29, 30, 32, 36, 40, 43, 46, 50, 54, 56, 58, 62	23

Norms and interpretation of Life Skills Inventory

Norms are the basis for interpreting test scores and they minimize the interpretive error of a measuring instrument. In order to establish the norms for the present life skills inventory, the investigator administered the newly constructed life skills inventory to 523 College students from the different districts of Mizoram. Thereafter, it was scored in accordance with the stated procedure. The investigator decided to offer two types of norms for interpreting the present inventory. One is based on z-score and the other one is based on stanine

(1) **Z-score norms:** The raw scores of all 523 college students were transformed into z-score. Based on the range of z-score, life skills were classified into 7 levels. These levels were further combined and classified into 3 categories for interpretation of the present study as depicted in the following table no. 3

Table 3
Norms for Interpretation of the levels of Life Skill based on z-score

Sl. No.	Range of z-Score	Levels of Life Skills	Interpretation
1	+2.01 and above	Extremely good life skills	Good life skills
	+1.26 to +2.00	Good life skills	
2	+0.51 to +1.25	Above average life skills	Moderate life skills
	-0.50 to +0.50	Average life skills	
	-1.25 to -0.51	Below average life skills	
3	-2.00 to -1.26	Poor life skills	Poor life skills
	-2.01 and below	Extremely poor life skills	

(2) **Stanine norms:** The stanine scale is applied to the raw scores of 523 college students through a process involving frequency distribution and percentile ranking based on the normal distribution curve. This results in the distribution of scores into nine stanine categories. The breakdown of students in each stanine is as follows: the first stanine includes 4 percent of students, the second stanine includes the next 7 percent, the third stanine includes 12 percent, and the fourth stanine includes the subsequent 17 percent. The middle or fifth stanine encompasses 20 percent of students, followed by the sixth stanine covering 17 percent, the seventh stanine with 12 percent,

the eighth stanine with 7 percent, and the top or ninth stanine with 4 percent of the total cases. This stanine grading system serves as a normative reference to interpret raw scores. Specifically, stanine 1 indicates extremely poor life skills, stanine 2 and 3 represent poor life skills, stanine 4, 5, and 6 signify normal life skills, stanine 7 and 8 denote good life skills, and stanine 9 reflects extremely good life skills.

The score range, stanine grade and interpretation of the scores are given in the following Table 4.

Table 4
Norms for Interpretation of Life Skill based on Stanine

Sl. No	Score Range	Stanine Grade	Interpretation
1	Above 292	9	Extremely good life skills
2	281-291	8	Good life skills
	270-280	7	
3	259-269	6	Moderate life skills
	248-258	5	
	237-247	4	
4	226-236	3	Poor life skills
	216-225	2	
5	Below 215	1	Extremely poor life skills

2. Level of life skills of college students in Mizoram

(a) College students having good ***life skills*** were very few and formed the lowest percentage (29.06%) of the students. Students with moderate life skills constituted the largest percentage (41.68%) followed by those with poor life skills (29.26%).

(b) The study showed that college students having good ***thinking skills*** (28.87%) were almost similar to those possessing poor thinking skills (28.49%). Most of the students were found to be having moderate thinking skills (42.64%).

With respect to components under thinking skills:

(i) College students with good self-awareness skills (32.89%) were relatively scarce. The largest portion (35.95%) was constituted by those with moderate self-awareness skills, followed by those with poor self-

awareness skills (31.16%).

(ii) It was found that college students having good problem-solving skills formed the lowest percentage (27.92%) of the students. Those with moderate problem-solving skills constituted the highest percentage (40.53%) followed by those with poor problem-solving skills (31.55%).

(iii) Among college students in Mizoram, 17.97 percent exhibited good decision-making skills, which constituted the very least. It could be seen that the majority of the students possessed moderate decision-making skills (60.42%), followed by those with poor decision-making skills.

(iv) The research clearly revealed that as low as 23.14 percent of college students in Mizoram exhibit good critical thinking skills, while the highest proportion belonged to the students with moderate critical thinking skills (44.93%) which was followed by those with poor critical thinking skills (31.93%).

(v) College students who possessed good creative thinking skills constituted the smallest proportion at 24.86%. Those with moderate creative thinking skills made up nearly half of the sample population at 47.42%, while those with poor creative thinking skills accounted for 27.72%.

(c) College students with good ***social skills*** (28.49%) were once again identified as the minority, closely followed by those with poor social skills (29.64%). The largest percentage of students exhibited moderate social skills.

With respect to components under social skills:

(i) The study revealed that only 26 percent of college students in Mizoram possessed good empathy skills. The most substantial percentage (43.79%) of college students exhibited moderate empathy skills, while 30.21 percent were identified as having poor empathy skills.

(ii) 32.89 percent of college students in Mizoram had good interpersonal relationship skills, slightly surpassing the 28.3 percent of college students who had poor interpersonal relationship skills. The highest percentage among college students was those exhibiting moderate

interpersonal relationship skills, accounting for 38.81%, although the difference was minimal.

(iii) College students were found to be having a relatively small percentage of good effective communication skills at 31.36 percent and this figure closely resembled the proportion of students with poor effective communication skills, which stood at 30.02 percent. Notably, the largest segment of college students possessed moderate effective communication skills (38.62%) which was relatively close to the other two results.

(d) It was observed that college students who demonstrated good ***emotional skills*** comprised an intermediate proportion (33.27%). The largest section consisted of students with moderate emotional skills (39.39%), while those with poor emotional skills constituted the smallest cohort (27.34%).

With respect to components under emotional skills:

(i) The percentage of college students having good coping with emotion skills (28.68%) were found to closely resemble those exhibiting poor coping with emotion skills (27.53%), while the largest group constituted of those students having moderate coping with emotion skills (43.79%).

(ii) College students possessing good coping with stress skills (23.71%) form the smallest proportion, while the highest percentage is exhibited by college students having moderate coping with stress skills (45.89%) which was followed by those with poor coping with stress skills (30.4%).

3. Level of cognitive abilities of college students in Mizoram

(a) College students having high cognitive abilities (33.65%) represented a significant proportion of the students compared to those possessing low cognitive abilities (22.56%). However, they were far less compared to college students exhibiting average cognitive abilities (43.79%) which formed the highest percentage.

4. **Comparison of the different components of life skills and cognitive abilities of college students with reference to gender**

(a) The research indicated that male college students in Mizoram had superior life skills compared to their female counterparts.

(b) Male college students were observed to possess significantly better thinking skills in comparison to their female counterparts.

(c) The study revealed that there was no significant disparity in the social skills of male and female college students in Mizoram.

(d) Male college students were found to exhibit better emotional skills than their female peers in Mizoram.

(e) It was determined that there was no significant distinction in the cognitive abilities between male and female college students in Mizoram.

5. Comparison of the different components of life skills and cognitive abilities of college students with reference to stream of study

(a) Research revealed that science college students in Mizoram exhibited better life skills than their counterparts in the commerce line.

(b) The study found no significant disparity in the life skills of science and arts college students in Mizoram.

(c) Similarly, there was no significant difference in the life skills of commerce and arts college students in Mizoram.

(d) Science college students demonstrated significantly superior thinking skills compared to commerce college students in Mizoram.

(e) Science college students possessed better thinking skills than arts college students in Mizoram.

(f) However, there was no significant difference in the thinking skills between commerce and arts college students in Mizoram.

(g) The research showed no significant variation in the social skills of science and commerce college students in Mizoram.

(h) Likewise, there was no significant difference in the social skills of science and arts college students.

(i) There was no significant difference in the social skills between commerce and

arts college students in Mizoram.

(j) The study revealed that there was no significant difference in the emotional skills of science and commerce college students in Mizoram.

(k) It was also observed that there was no significant difference in the emotional skills of science and arts college students.

(l) The study found no significant disparity in the emotional skills of commerce and arts college students in Mizoram.

(m) Science college students were found to be having higher cognitive abilities than commerce college students in Mizoram.

(n) Science college students exhibited significantly higher cognitive abilities than arts college students.

(o) The study concluded that there was no significant difference in the cognitive abilities of commerce and arts college students in Mizoram.

6. Comparison of the different components of life skills and cognitive abilities of college students with reference to father's working status

(a) Research indicated that students with working fathers exhibited superior life skills compared to those with non-working fathers.

(b) The study found no significant disparity in the thinking skills of college students based on their fathers' working status.

(c) Students whose fathers were employed were observed to possess significantly enhanced social skills in comparison to their counterparts with non-working fathers.

(d) The research concluded that there was no significant difference in the emotional skills of college students with reference to their fathers' working status.

(e) The study also revealed that there was no significant variation in the cognitive abilities of college students with reference to their father's working status.

7. Comparison of the different components of life skills and cognitive abilities of college students with reference to father's educational qualification

(a) The study found no significant difference in the life skills of college students

with under-matric fathers and graduate fathers.

(b) The research indicated that there was no significant variation in life skills between college students with graduate fathers and those with post-graduate fathers in Mizoram.

(c) Students with post-graduate fathers were observed to possess superior life skills compared to their counterparts with under-matric fathers.

(d) The study revealed no substantial disparity in thinking skills between college students with under-matric fathers and those with graduate fathers in Mizoram.

(e) There was no significant difference in the thinking skills between college students with graduate fathers and post-graduate fathers in Mizoram.

(f) The research demonstrated that students with post-graduate fathers exhibited better thinking skills than students with under-matric fathers.

(g) The study showed that there was no significant difference in the social skills of college students with under-matric fathers and graduate fathers in Mizoram.

(h) Likewise, there was no significant variation in social skills between college students with graduate fathers and those with post-graduate fathers in Mizoram, as indicated by the study.

(i) The research found that students with post-graduate fathers displayed enhanced social skills in comparison to students with under-matric fathers.

(j) In Mizoram, the study concluded that there was no significant difference in emotional skills between college students with under-matric fathers and graduate fathers.

(k) Additionally, no significant difference in emotional skills was observed between college students with graduate fathers and post-graduate fathers in Mizoram.

(l) The study's results showed that there was no significant difference in emotional skills between college students with under-matric fathers and post-graduate fathers in Mizoram.

(m) The research found no significant difference in the cognitive abilities of college students with under-matric fathers and graduate fathers in Mizoram.

(n) Similarly, there was no significant variation in cognitive abilities between college students with graduate fathers and post-graduate fathers in Mizoram, as indicated by the study.

(o) The study's findings revealed that there was no significant difference in cognitive abilities between college students with under-matric fathers and post-graduate fathers in Mizoram.

8. Relationship between different components life skills and cognitive abilities of college students

(a) A negligible positive correlation was observed between life skills and cognitive abilities.

(b) There existed a minimal positive relation between thinking skills and cognitive abilities.

(c) There was a negligible positive relationship identified between social skills and cognitive abilities.

(d) No significant link was found between emotional skills and cognitive abilities.

Educational implications of the study

The present research holds significant educational implications, shedding light on the crucial intersection of life skills and cognitive abilities among college students in Mizoram. This study has the potential to contribute substantially to educational practices and policies in the region. First, understanding the relationship between life skills and cognitive abilities allows educators to tailor and enhance the existing curriculum to better address the specific needs of college students in Mizoram. Integrating life skills development into the academic curriculum can promote holistic education; preparing students not only for academic success but also for the challenges they may face in their personal and professional lives. Second, the construction and standardization of the Life Skills Inventory will provide a tool for identifying specific life skills that may be lacking among college students in Mizoram. This information is invaluable for educators and policymakers as it enables them to target interventions and design programs aimed at filling these gaps, ensuring that students are adequately equipped with the essential skills for personal and professional success. Third, recognizing the relationship between life skills and cognitive abilities allows for the development of personalized learning strategies. By tailoring teaching methods to enhance both cognitive abilities and life skills, educators can create a more supportive

and engaging learning environment. This approach is likely to result in improved academic performance, increased motivation, and better overall well-being among college students. Fourth, the study's findings can serve as a catalyst for a paradigm shift in educational practices, emphasizing the importance of holistic development. Beyond academic achievements, colleges can actively promote the acquisition of life skills, fostering personal growth, emotional intelligence, and resilience. This holistic approach aligns with the evolving demands of the 21st-century workforce, where interpersonal skills and adaptability are increasingly valued. Fifth, the research can inform the development of guidance and counseling programs that specifically target the identified life skills needs of college students in Mizoram. These programs can offer support in areas such as decision-making, communication, time management, and stress management. By addressing these aspects, colleges can contribute to the overall well-being and mental health of their students. Sixth, life skills play a crucial role in preparing students for the demands of the workforce. The study's insights into the relationship between life skills and cognitive abilities can inform the development of career readiness programs. These programs can equip students with the skills and mindset necessary for successful transition into the professional world, promoting employability and long-term career success. Seventh, the research findings can be instrumental in shaping educational policies in Mizoram. Policymakers can use the evidence-based insights to formulate policies that prioritize the integration of life skills education within the broader academic framework. This may involve curriculum adjustments, teacher training programs, and the establishment of support systems to ensure the effective implementation of life skills education. Eight, the study's educational implications extend beyond individual students to the broader society. Graduates who possess a strong foundation in both cognitive abilities and life skills are more likely to contribute positively to their communities. By fostering well-rounded individuals, colleges in Mizoram can play a pivotal role in building a society characterized by resilience, empathy, and effective problem-solving.

In a nutshell, the research on the construction and standardization of a Life Skills Inventory and its relationship with cognitive abilities among college students in Mizoram holds immense potential to transform educational practices. By addressing the identified gaps and integrating life skills development into the educational system,

colleges can better prepare students for the challenges they will face in their academic, professional, and personal lives. The implications of this study extend to curriculum design, teaching methodologies, counseling services, and policy formulation, ultimately contributing to the holistic development of individuals and the betterment of society.

Recommendations

Following are the recommendations to enhance life skills and improve cognitive abilities among college students in Mizoram:

Recommendations for improvement in life skills

Enhancing life skills, including thinking skills, social skills, and emotional skills, among college students in Mizoram is vital for their holistic development. Here are some recommendations to achieve this:

1. ***Integrated Life Skills Curriculum:*** Integrate life skills development into the college curriculum. Offer courses or workshops that explicitly focus on thinking skills, emotional intelligence, and interpersonal communication, ensuring that these skills are given the same importance as academic subjects.
2. ***Critical Thinking Exercises:*** Incorporate critical thinking exercises and problem-solving activities across various disciplines. Encourage students to analyze complex issues, evaluate evidence, and engage in debates to enhance their thinking skills.
3. ***Peer Learning and Collaboration:*** Promote peer learning and collaborative projects. Working in teams exposes students to different viewpoints, improving their social and teamwork skills while fostering a culture of cooperation.
4. ***Emotional Intelligence Workshops:*** Organize workshops on emotional intelligence, self-awareness, and self-regulation. These sessions can help students understand and manage their emotions, improving their overall emotional well-being.
5. ***Communication Skills Training:*** Offer communication skills training to help students become effective and empathetic communicators. This can include

public speaking courses, conflict resolution workshops, and active listening exercises.

6. ***Cultural Sensitivity Programs:*** Promote cultural sensitivity and diversity awareness programs. Encourage students to participate in cultural exchange activities to develop empathy, respect for differences, and strong social skills.
7. ***Mental Health Support Services:*** Establish mental health support services on campus. Provide access to counselors and resources that can help students cope with stress, anxiety, and emotional challenges, ensuring their emotional well-being.

By implementing these recommendations, colleges in Mizoram can create a conducive environment for students to develop not only their academic skills but also the essential life skills needed for personal growth, successful social interactions, and emotional resilience throughout their college journey and beyond.

Recommendations for improvement in cognitive abilities

Improving cognitive abilities among college students in Mizoram is essential for their academic success and future prospects. Here are five focused recommendations to foster higher intelligence levels:

1. **Cognitive Skills Development Courses**: Incorporate cognitive skills development courses within the curriculum. These courses should focus on memory improvement, problem-solving techniques, and critical thinking exercises. Providing students with structured opportunities to enhance their cognitive abilities can lead to great improvements.
2. **Research-Based Learning**: Promote research-based learning and critical analysis across disciplines. Encourage students to engage in research projects, case studies, and independent investigations. Hands-on research experiences challenge their analytical and problem-solving skills, contributing to higher intelligence.
3. **Intellectual Engagement**: Create a culture of intellectual engagement by organizing seminars, guest lectures, and academic debates. Invite experts to share their knowledge and inspire students to explore diverse subject areas.

Intellectual curiosity nurtured through such activities can lead to increased intelligence.

4. **Technology Integration**: Leverage educational technology platforms and online resources to facilitate self-directed learning. Encourage students to explore online courses, interactive simulations, and educational apps that promote cognitive development and problem-solving.
5. **Mentorship Programs**: Establish mentorship programs connecting students with experienced faculty members or professionals in their field of interest. Mentors can guide students in intellectual pursuits, challenge them to think critically, and provide valuable insights, contributing to higher IQ levels.

By implementing these recommendations, colleges in Mizoram can create a stimulating educational environment that fosters higher intelligence levels among their students. Nurturing cognitive skills, critical thinking, and a passion for learning can have a profound impact on both academic success and future career prospects.

Suggestions for further research

Following have been suggested for further research:

1. Conduct a longitudinal study to observe how life skills among college students in Mizoram evolve over time and whether there are changes in cognitive abilities as they progress through their academic years.
2. Compare the life skills and cognitive abilities of college students in Mizoram with those from other states in India to identify potential regional variations and their impact on these skills.
3. Explore the specific correlations between different life skills and distinct cognitive abilities to understand the distinctions of how these skills interact and potentially influence each other.
4. Investigate external factors such as family background, socio-economic status, or educational environment to determine their impact on the development and manifestation of life skills among college students.
5. Explore the various age groups or educational levels beyond college students to observe if there are differences or similarities in life skills and cognitive abilities across different educational phases.

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